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THE COVER Photo by Acme News Pictures Inc.

Our cover shows the completed layout of New York's North Beach Airport, dedicated to peace and not to war. Though there are Army and Navy planes grouped before the hangars, we do not get that fearful sense of war equipment poised for destruction, but rather a feeling of pride in our air commerce for economic development, typified by the transatlantic clipper plane to the left.

The American Engineer assumes no responsibility for statements or opinions expressed by contributors. Their names identify the source of the same.

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EDITORIAL • • •

THE SOLID FRONT

An effort is being made, and there is no doubt that it will be successful, to have the major engineering societies throughout the country—totalling approximately 68,000 members—prepare a joint report on recommendations for standard salary and fee schedules in the engineering profession.

Here is a second opportunity for thorough cooperation and understanding in the engineering field toward a common goal, such as was exemplified in the preparation of a Model Law for the registration of professional engineers in the several states, and the creation of boards to pass upon their adequate qualification.

As this is for the common good of the profession, and for the safety and protection of the public, there need not be any desire by one or more organizations to take the chief credit, when the ultimate fact has been accomplished.

The National Society of Professional Engineers, which will be one of the participating groups, pledges itself wholeheartedly to do its share with the other Societies in preparing these schedules. A number of our State Societies already have prepared and adopted such schedules, and the general committee will certainly utilize these in their study of the problem.

Differences in salary and fee scales in various sections of the country will be taken into consideration, and when the final report has been adopted, if there are some discrepancies between the general scale and that adopted by a single state for the same area, we are certain that our state groups will immediately adjust themselves, so that not more than one scale will be applicable within a state.

Let us demonstrate again to the public that the engineering profession is not "a house divided against itself," but one which presents a solid front when basic problems are involved!

—Robert Hall Craig

W.P.A. and the Engineer

Address of Clarence W. Post, Chief Engineer-Deputy Administrator of the New York State Works Progress Administration, to the New York State Society of Professional Engineers, Zone 5, Troy, New York

Strange as it may seem, many people interested in commerce, industry, commercial pursuits and the professions, are not familiar with the regulations and legal requirements under which the Works Progress Administration operates. Many believe the Administration initiates projects, purchases material, supplies the forces, designs the structures to be erected, and pays the workers for their services. In view of the fact that the public is not well informed on this matter, these facts are believed to be of interest.

The Works Progress Administration is an agency of Government, composed almost entirely of those, who through no fault of their own, have lost private employment and have been certified as in need of relief by the Home Relief Bureaus of the various political subdivisions of the State.

The Welfare Officer, be he elected or appointed, is the certifying officer for all persons who receive work relief, and therefore for all persons who receive employment under the WPA. When the Works Progress Administration requests labor from the local Welfare Officer, it has no knowledge of the names of the men; of their age or physical condition, of their creed or politics, of their race or color; who will report to the project on instructions of the Welfare Officer. Its only interest is in securing able bodied men, who can and will perform a service for a monetary consideration, at rates known as the security wage.

Investigation of the statement that people make a career of WPA discloses these interesting facts:

Group Ages of the Workers

Over 65	2.68%
Between 50-64	27.36%
Between 40-49	27.08%
Between 26-39	32.86%
Between 18-25	10.02%

There is now 60,000 persons engaged in work; 57% of that number are over 40 years of age; only 21% of that number have been identified with the WPA since October 1935.

It must be remembered that a large number of persons, more than 40 years of age, would invariably be the first to lose employment in private industry. It should likewise be remembered that those over 40 years of age will have difficulty in regaining their independence through private employment.

A second investigation discloses these facts regarding the types of workers—men and women:

Those classified as White Collar	12.39%
Those identified with building trades	22.41%
Those identified with manufacture and industry	23.52%
Those in the unskilled laboring class	41.68%

With these facts in mind, you may now conclude we must have a diversity of work to engage the services of all classes.

There is in operation 1225 projects, representing complex classes of work. The average of the projects is for $9750 in Federal funds, $3150 in Sponsor's funds.

Not more than 90 projects range above the $200,000 class. Not more than 60 projects range above the $300,000 class. Less than 14% of the work is the so-called "white collar and women's projects."

The Federal funds, in general, are used for the payment of the security wage; less than 6% is used for the purchase of materials. The Sponsor's funds are invariably used for the procurement of equipment, supplies and materials.

Projects are initiated by officials of villages, cities, towns, counties, and the state. Projects are submitted to the Administration by the elected or appointed officials for each of the political units of Government. That is, a County Superintendent of Highways, a City Engineer, a Town Superintendent of Highways, and etc. The Administration recommends that the plans and specifications accompanying each proposal be prepared by a licensed professional engineer or a registered architect.

The Works Progress Administration employs a number of engineers. The Operations Division is organized on an engineering basis. Experience has taught all agencies of Government that improper planning results in costly work. It has likewise found that well prepared plans result in ease and safety of operation, economy in execution; less expensive to the sponsor, to the taxpayer and the Federal Government. It has also found that persons abutting the public work are satisfied with an orderly procedure of agressive work well performed. Work cannot be well performed unless well planned and accurately estimated.

Salaries are not attractive. They are kept at a reasonable level for a Relief program. They are not high enough to keep anyone in the program when an apportunity is presented for private employment. A number have been able to leave our employment to accept positions at salaries commensurate with their ability.

During the early days of the program, criticism was directed against the types of projects then in operation. It seemed to be entirely forgotten that all projects were submitted for approval by local officials. This criticism should, in all fairness, have been directed against them rather than against the WPA. These projects were generally a carry over from the

old system of local administration where the funds furnished by the Federal Government and turned over for local distribution were spent generally under the supervision of Social Welfare workers, who had no conception of real work program. The operation of a Work Relief program on a Budget deficit basis, allowing from 4 hours per month to 140 hours per month according to the individual workers budget deficit, made efficient operation practically impossible.

In addition, the State had only nominal control over the local work bureaus and could take no action for inefficiency of local supervision on projects. This is not the case under Federal control. Today, in New York State, the type of project and the results are far superior to those of the fall of 1935. It must be remembered our first objective at that time was to put the relief cases to work, and remove New York from the list of states receiving Federal funds for Home Relief. Starting in August 1935, with 305 project workers, and expanding to 135,531 project workers in December 1935, occasioned many a problem. Placing the workers on projects was the first problem, getting them paid was the second, and bringing about order and efficiency on the project was a third. Each was a major step. It was never done before. No industry ever expanded to more than 100,000 workers in 6 months.

One of the great difficulties in operating a work program is to persuade the various communities to prepare adequate plans and specifications for a given project. It is true that in an effort to cooperate, we permit a community to present sketches of a project submitted for approval, to enable the Engineering Review Section to make a fair estimate of the cost. We find, however, that many times, the community then desires the WPA to operate the project from the entirely inadequate preliminary sketches. We know it is costly. We tell them so. We urge engineering plans, and notify the local community that guesses are costly projects.

Our best projects are those for which adequate plans and specifications have been prepared. We prefer to operate projects that have been prepared by a Consulting Engineer, preferably where Consulting Engineers have been retained by the Community to inspect the work while in progress. Even under these conditions it is sometimes difficult to operate. It must be remembered that to proceed efficiently it requires the cooperation of both the WPA and the Sponsor. Many times the Sponsor delays furnishing materials or equipment which they have agreed to furnish. Progress and efficiency are crippled on this account. In cases where the cooperation is genuine, results have been attained that compare favorably with contract prices.

The State Administration has proceeded on the theory that if proper supervision is furnished, the results will take care of themselves. We find that it works out that way, in all cases where cooperation is received.

In judging the results of a program of this kind, consider the variety of factors that enter the picture. Some of the rules may seem absurd from a construction standpoint.

Early in 1936 we established the principle that a five or six day week operation was essential. To do this, projects must be arranged so that a continuous stream of labor will keep the man-power at a uniform number, regardless of the limitation of hours imposed by the rules on the various types of labor required. This is extremely difficult.

Congress has stated that the wages must be the prevailing rate per hour in each county in the State. An Executive Order states that the earnings cannot exceed the Security Wage. These restrictions mean that common labor can work only the number of hours sufficient to earn the Security Wage, and, of course, the skilled tradesman can work only about one-half the length of time of common labor. Operating a construction job under these conditions of varying hours is particularly difficult in view of the scarcity of skilled workers on relief rolls. We require each sponsor to sign an agreement to furnish the skilled help from their own funds if none is available from relief rolls.

The wages paid are known as Security Wages. While, from a construction standpoint it would be desirable to allow men to put in their time in one straight stretch, especially the skilled trades, this is not done. Such procedure might make staying on the WPA rolls too attractive. No one is given a full week off in which they may take additional employment at a lower rate than the prevailing wage. We have found many cases where the men have put in the requisite number of hours on WPA projects and then have taken jobs with contractors during their off time less than the prevailing rate of wage. When this is discovered the individual is discharged.

On important projects we have no trouble in procuring excellent supervision at salaries we believe to be reasonable for a relief program. For example, we have one project for six miles of monolithic concrete sewer, and an elaborate treatment plant, the total cost running about $2,500,000. A General Superintendent at $250 per month and an Assistant Superintendent at $225 per month were placed in charge of the project. Both men had been successful contractors. The project employed 2000 men at one time. It is almost completed. The quality of the workmanship is excellent. The Consulting Engineer, employed by the Sponsor, has repeatedly stated that he desired no finer workmanship. All other projects of large size are handled in a similar fashion regarding supervision. Supervision, which is usually non-relief, runs about 3½%, whereas regulations allow 5%.

It is the policy of the State Administrator not to ask men to do work that should be done by machinery. Therefore, we operate more equipment on projects than the average State relief program. It is useless to expect men with picks, shovels and wheelbarrows to move large quantities of cut, when a power shovel can do the work in a short time. Experience has shown that men will take no interest in work if they know the work being done is only something to keep them busy. Show the men a project where they know that they are accomplishing something, and they are pretty good workmen.

We now come to the third point—the personnel of the Operations Division. The State is divided into 12 areas. One area constituting Monroe County is commensurate in population with another area constituting 8 counties. Four Division Engineers are responsible for the work in the 12 areas. Each of these Division Engineers is licensed by the State to practice his profession. You may also be sure that every posi-

tion requiring engineering experience is held by a licensed professional engineer. The field inspection force, under the Division heads, reports on each project once a month. An average of four reports per day are made. The field engineer's reports contain information as to the location, type of work, the number and labor classifications of all employees, quality of supervision, comments on safety of operations, physical percentage of work completed, financial percentage expended, and finally, where necessary, recommendations to improve the service. The field engineers are required to enforce safety construction methods on all projects. That they do their work well is attested by the Frequency Rate and Severity Rate, which is below the average rate for commercial companies, notwithstanding the liberality of the United States Compensation Commission. It is observed that engineers have a definite and important role in the success of the work undertaken.

When the Government advanced the plan that able-bodied relief cases would be taken care of with Federal funds and that *unemployables* would be taken care of by State and local welfare agencies, it was assumed that each locality would submit projects in sufficient quantities to absorb all the able-bodied citizens on the Home Relief rolls. This has not always been the case and in some communities we have never been able to absorb all relief cases due to an insufficient number of projects. In few instances is this the result of financial difficulty, but rather a reluctance on the part of the community to expend a fair sum of money on the preliminary engineering required to initiate real worthwhile projects which would be of lasting benefit.

No charge of politics can be sustained in the apportionment of funds for the operation of projects in the various political sub-divisions. The WPA has offered repeatedly to employ all certified employable relief cases where projects were available.

There has been an endeavor on the part of some sponsors to submit projects for approval that were of the "boondoggling" type, principally for the reason that this type of project generally requires a very small expenditure of funds on the part of the sponsor. These have been rejected by the State Administration. This, of course, has caused some disagreements with the sponsor. Another type of project which has caused much discussion is the real estate development project. Wherever we have had these types of projects submitted we have rejected them. They are attractive to the sponsoring community inasmuch as the materials required are frequently furnished by the owner of the subdivision. Our rejection of such projects is based on the fact that private owners are not entitled to enhance the value of their property through the use of Federal funds.

It is my belief that lack of projects is, in part, due to a reluctance to increase the staff of the City Engineer, or to employ a Consulting Engineer. In a large measure, also, to the fact that the Federal Government has not yet formulated a policy of continuity of programs so the community may be assured once a project is undertaken it will be completed before Federal aid is abolished or withdrawn.

Citing one case: A project for a relief storm sewer 6800 feet long, 96 inch diameter, precast reinforced concrete pipe, was submitted and approved on preliminary sketches in July, 1938. The City Engineer expected to complete detailed plans by March 1, 1939. This project is a very large undertaking, as the route followed is through the old portion of the City where the streets are narrow and subsoil conditions are hazardous. This community now raises the question as to whether or not we will assure them that the project will be finished with Federal aid if it is started. Of course, no one can give the community any guarantee that once started the project will be continued with Federal funds. The uncertainty as to the length of the program is a distinct handicap, both to the sponsors and to the personnel of the Federal agency.

At no time since 1935 has any State area been limited as to allocations of funds. The only limitations have been the number of eligible relief cases for which projects are available. It would be unreasonable to assign more workers to a district than there were jobs available.

The often repeated charge: "Politics in the WPA," as far as the New York State Administration is concerned, is absurd. The State Administrator has repeatedly announced the only qualification he demands of the personnel is efficiency and loyalty to the Works Progress Administration.

As Chief Engineer, it has been my duty to have charge of the operation of projects. I probably have ordered discharged for inefficiency or violation of regulations, more supervisory employees than anyone else in the Administration; yet at no time has anyone questioned such dismissals. In fact, politics in relief is played, if at all, by the local welfare officials. In all but two cases in New York State, welfare officials are elected to office, and a study of the relief rolls in many districts shows that just before the November election relief cases increase sharply. These officials should be appointed to office and divorced entirely from politics. The fact that they are elected by popular vote may tend to warp their judgment, especially when running for reelection.

Few persons realize that the Works Progress Administration does not actually pay the employees or make any purchases of material. In the case of payrolls for personal services, the Finance Division of WPA keeps the time and certifies the payrolls to the local United States Treasury Accounting Division, where they are audited and then passed to the local United States Treasury Disbursing Officer for payment. Payment is made by check, mailed to the employee's home.

Requisitions for purchase of materials furnished by the Federal Government originate in the local WPA office. They are checked in the State Administration office against the project proposal, to ascertain correct quantity and quality. They then go to the Finance Division and from there to the U. S. Treasury Accounts office for encumbrance. Finally, they are turned over to the U. S. Treasury Procurement Division for purchase.

All material or rented equipment is purchased or rented on a competitive bid basis, under Treasury rules. Bids are opened publicly and prices are generally below those quoted the sponsors when they purchase the same type of material. When the materials are delivered to the project, the WPA superintendent in charge signs a receipt and a Treasury Receiving Report is made out which is the Treasury's authority to pay for the purchase. The Receiving

(Continued on page 24)

THE ENGINEER IN FOREIGN LANDS

Canadian Tribute to The Engineer

American newspapers please copy

The Financial Post (The Canadian Newspaper for Businessmen and Investors), published at Toronto, in the issue of September 9th, has two special sections, covering 32 full-size newspaper pages, devoted to a recognition of the Engineer and his contributions to the development of the nation.

Spanning full-page illustrated articles are such headlines as the following:

Builders of Canada.
A Tribute to the Engineer and his Achievements.
National Wealth of Dominion Harnessed by the Engineer.
The Engineer Has Given Us Waterways.
Engineering Turns Night Into Day.
The Engineer Has Given Us Modern Bridges.
The Engineer Has Given Us Minerals, Oil.
The Engineer Has Given Us Our Industries.
Canada Regains Her Place in the Air.
Radio Is Engineering.
Test Tubes of Canada's Progress.
The Engineer Has Given Us Safe Highways.
The Engineer Has Given Us Water Power.
Engineering Ousts Disease.
Engineers Safeguard Shipping.
The Engineer Has Given Us Steam Railways.
Engineering Genius Built—And Engineering Skill Maintains The World's Greatest Travel System.
The Engineer Has Given Us Tall Buildings.
From Ore Dust to Dividends.
Farming Arid Acres.
Engineers Double-Check Industry.
Engineering Clears the Streets.
Engineering the Machine Age.

An Integrated Profession in Venezuela

Organization and Registration of Engineers in Venezuela

(Translated from the *Revista del Colegio de Ingenieros de Venezuela* by D. B. Steinman)

Excerpts from the Statutes establishing the Institute of Engineers of Venezuela (1922):

Article 2—The principal objects of the Institute of Engineers are:

. . . . . .

(e) To report, to the proper authorities, cases of illegal practice of the professions enumerated in Article 1 of this statute.

(g) To cooperate with the Public Authorities and to promote the study of technical questions and of matters of general concern.

. . . . . .

(p) To grant licenses for professional practice to the persons thereupon registered in said roster upon their fulfilling the requirements which establish their competency before the Body.

. . . . . .

Given and sealed under the seal of the Federal Executive, and approved by the Ministry of Public Education, in the Federal Palace, in Caracas, on the 24th day of April, 1922—The 113th year of Independence and the 64th year of the Federation.

(L.S.) V. Marquez Bustillos
(President of Venezuela)

Approved:

The Ministry of Public Education.

(L.S.) R. Gonzales Rincones
(Minister of Public Education)

Excerpts from the Law governing the practice of the Professions of Engineer, Architect, and Surveyor (1925): General Provisions

. . . . . .

Article 2—Only those are professionals in the fields of work specified in the preceding Article who have been granted by examination or endorsement the title of Engineer, Architect, or Surveyor *in Venezuela* in accordance with the respective Laws and Regulations.

. . . . . .

Article 6—No individual, firm or company may use in their announcements any professional designation to which this Law refers unless the individual or at least one member of the firm or company has lawfully secured the title of the respective profession or professions.

Given in the Legislative Palace in Caracas, the 15th day of July, 1925—Year 116 of Independence and Year 67 of the Federation.

BULLETIN FROM IRELAND

Cumann Na nInnealtoiri

(THE ENGINEERS ASSOCIATION)

1/3, Westmoreland Street.
Dublin, Ireland.

To the Engineers of Ireland:

The aims and objects of the Cumann, which have been much publicised in the past, and stated more fully in the accompanying leaflet, are so simple and fundamental that there has been general agreement about their essential soundness.

The following is a brief survey of what the Cumann Executive has been doing to carry out these aims and objects.

The Council, which consists of twenty-one members, holds ordinary meetings every fortnight throughout the year. In addition frequent meetings are held by sub-committees delegated to undertake special work—such meetings average over 60 per annum.

In 1937 a complete Register was made of all the engineers in Ireland, i.e., those holding a University degree or its equivalent. This Register, the only one of its kind, is kept up to date by almost daily revision arising out of changes of address, deaths, and so forth. A suitable letter supported by some of the Cumann's literature is sent to all new entrants to the profession.

(Continued on page 23)

Registration as a Channel to Professional Standing

An Address by Engineer Edwin J. Beugler, Secretary of the State Board of Registration for Professional Engineers and Land Surveyors, to the New Haven Chapter of the Connecticut Society of Professional Engineers

PREAMBLE. In administering the Act and formulating its procedure, the Engineers Registration Board recognizes two fundamental obligations:

1. To respect the right to his means of livelihood of any individual who has prepared himself conscientiously and properly to practice professional engineering or land surveying;

2. To protect the public as far as possible within the limits of the Act from such dangers, affecting life, safety, public health and property, as may arise from the attempt of incompetent or unethical persons to practice these professions.

EDUCATION. Technical education is the first qualification required for registration. An adequate foundation is required for any structure; the same applies to engineering qualifications. High School graduation may be considered an essential base on which to build. A college course comprising engineering fundamentals affords a common start for all branches; we wish to emphasize this even if the student has some special branch of engineering in view. There are 57 varieties (plus) of engineering lines. We venture to state that the branch finally adopted depends more on an available opening after graduation than one's desire for a special field which happens to be crowded and nothing in sight after commencement.

EXPERIENCE. Engineering experience is the most important phase of progressive advancement in acquiring qualifications for general registration. It has been stated that experience shall be sufficient in amount so that repetition produces (1) thorough understanding of the principles involved and (2) the development of judgment as to the method of analysis and solution. Engineering Society memberships progressively up from Junior, Associate, to Member, will aid and inspire the young man in absorbing the experience of other engineers.

PROFESSIONAL STANDING. Registration in most states recognizes a professional standing; a certificate is engrossed "Professional Engineer," although one's specialty may be a branch such as mechanical, electrical, civil, etc. In times past these branches had separate associations, and little in common from a technical standpoint. On the railroads the civils having to do with line location and construction were hardly on speaking terms with the mechanicals in charge of motive power. A derailment of a car or locomotive, according to the mechanical department, was due to bad track, while the civil engineer attributed it to a sharp or worn flange on a car wheel. Today the national engineering societies are living peaceably together.

PROFESSIONAL STANDING THROUGH REGISTRATION. Through registration we are becoming professionals, and properly so. Special courses will be studied at technical schools and universities. Fundamental subjects may be common to all branches, while the specialty is taken up later. What a graduate becomes ten years or more after leaving college depends on opportunity rather than choice. This is particularly true in employment with a large engineering organization. In fact, work on a given branch may fade away into another specialty, or into administrative duties. Many engineering lines are interrelated—e.g., in a hydro-electric plant, the civil will look after the dam and other structures; the electrical will lay out the generators, switchboard and transmission sections; while the mechanical will design the hydraulic turbines and control.

Administrative ability comes with experience—handling men in an organization.

VIOLATIONS. The Act provides for penalties. "The Secretary shall aid in the enforcement of the Act." The Board is not organized for policing. The Engineering Societies are in a position to spot violations and to report to the Board. A number of cases have been called to the attention of the Board by registrants, and followed up. First a polite note is sent the alleged violator stating the complaint and asking for the facts. Most of the cases are promptly eliminated by a change of title or a request for application blanks. No case has so far arisen warranting reference to the Attorney General for action. The Attorney General has promptly given opinions as to the legal intent or requirements of the Registration Act.

LAW. No radical changes in the Connecticut Engineers Registration Law are deemed advisable at present. Senate Bill No. 305 which proposed to put twenty-odd licensing and registration boards under a state executive secretary and eliminate all board secretaries met with general opposition. Certain revisions may be advisable in some of the present statutes relating to registration. Such changes, however, should be formulated by cooperative review by the State Legislative Council or other state body and the executives of the various boards concerned. No opportunity was afforded the Engineers Registration Board to advise on Senate Bill No. 305 with respect to four years' experience in administering the present Engineering Registration Statute.

CANVASS. Some question has been raised as to a comprehensive notification of engineers and land surveyors with regard to the legislative act requiring registration unless specifically exempted. The im-

portance of doing this was fully appreciated by the Board at the time of organization. It was found that about 3500 were listed in the 1930 U. S. census as engineers and land surveyors. Lists of engineering society members, technical school alumni residing in Connecticut, city and telephone directories, and other sources were consulted, and a list of about 4000 was compiled. To each of these a notice was sent giving the general requirements of the registration law for professional engineers and land surveyors; this bore a perforated stub form to be filled out in case registration was desired or required.

ANNUAL OPERATIONS TO SEPTEMBER 30:

	1936	1937	1938	1939*	Total
Applications Received	1246	715	130	74	2165
Registered	922	644	164	64	1794

* To May 20 only.

Practitioners previously engaged in private practice, admitted under the "grandfathers clause" numbered approximately 160.

EXEMPTIONS. Connecticut Law—The Attorney General ruled that U. S. relief work entitled a man to exemption if his pay check was received directly from the Treasurer of the United States.

We have been glad to note that many exempted men in the employ of public utilities, federal service, or a manufacturing corporation have applied for registration as a desirable consummation in case of change of employer or simply for the enhanced professional standing.

NATIONAL WORK. Reciprocity for registrants in other states having requirements equal to Connecticut is provided under the statute. Applications of non-registrants from other states having registration laws are subject to satisfactory explanation as to why the applicant has not registered in his own state.

The N. C. S. B. E. E. composed of Board members in 41 other states is the organization through which the experience in one state is made available to others. A general meeting is held annually for consideration of committee reports and other matters. A subsidiary agency is the National Bureau of Engineering Registration, which provides for accrediting a registrant of one state to other states.

Another joint agency is the Society for the promotion of Engineering Education, together with five national engineering societies for promoting their common interest—the development of the young engineer. Incidentally, it is accrediting the curricula of engineering schools.

Connecticut has been honored by the election of Dr. Scott, Chairman of our Board, to the office of President of the National Council of State Boards of Engineering Examiners for the current year.

SUMMARY. The public is recognizing the professional status as of social significance. As in law and medicine, so now in engineering the public interest is so involved that quality must be assured. Incompetency may bring disaster. But whatever the philosophy of licensure or the pros and cons, we have it in four-fifths of the states—it is *de facto*.

We cannot create professional qualities by legislation, although it may establish conditions under which the profession may develop itself. In law, medicine and engineering the responsibility for development rests with the members of the profession. They must see to the cultivation of the qualities which characterize a profession; an organized body of knowledge and skill, developed by research and passed on to successors, standards of excellence of the individual and the group, service to the community by those who accept duty as a privilege and who find satisfaction and enthusiasm in exercising their knowledge and skill. Registration, therefore, is an opportunity and a challenge to engineers—individually and by groups—to advance their status.

SIMILAR PROBLEMS

Competitive Bidding

Five reputable accounting firms were invited to submit bids for an audit of the books of Westchester County, New York, and each refused. The accountants explained to county officials the reasons why bidding was improper—reasons familiar to every reader of *The Journal.* Shortly after, to the surprise of the accountants, they found themselves the subject of violent editorial attacks in Westchester County newspapers. "By what right," says one editor, "does the accounting profession assume that to enter into competitive bidding for the job of auditing the books of a county is degrading? What is their reason for assumption that there is something unethical in competition? . . . Do the members of this profession consider they are above the level of others who would serve the public interests? And is this county going to jeopardize its balanced budget by accepting that self-serving theory?

Other newspapers expressed similar views, indignantly suggesting that accountants were combining to secure higher fees at the expense of the public purse.

It is evident that much education is needed before the accounting profession can succeed in its effort to protect the public by eliminating competitive bidding for audits of governmental units. Westchester County, despite the indignation of its press, is likely to have its books audited by a reputable and competent accounting firm, an experience which many counties where competitive bidding prevails have never enjoyed.

The fallacy of bidding has been proved again and again. Where price is a governing factor, the self-respecting accountant will not risk his professional reputation by venturing a low bid which he doubts would cover the cost of a proper examination. The work always goes to the one who will take that chance.

It needs to be emphasized that professional service is not a commodity. One can buy cement or asphalt on a price basis with reasonable security, but no county official can discover that he has "bought" an inadequate audit until it is too late. He must depend on the reputation and the integrity of the auditor, and reputable auditors will not cut corners in an effort to become low bidders.

(Reprint from *The Journal of Accountancy*, September, 1939)

FOOD FOR THOUGHT

Random Gleanings From an Engineer's Desk

By D. B. STEINMAN

Soap-box orators of a crimson hue have been shouting for years that "ten percent of the population gets ninety percent of the wealth and ninety percent of the people get only ten percent of the wealth." What are the facts? From the recent report of the National Resources Committee, a little mathematical analysis reveals the following: 67 percent (not 10 percent) of the families in the U. S. earn 90 percent of the total income. And this is before deducting income taxes, which still further reduce the proclaimed disparity. If we were to redistribute all incomes of over $10,000, it would add $49 per year to the remaining family incomes, or $10 per capita per year; provided (and there's the hitch!) that the total national income remained unaffected by such cancellation of incentive and reward for courage, initiative, effort, and efficiency.

* * *

A recent report of the National Bureau of Economic Research on "Incomes from Independent Professional Practice" has been featured in the public press as showing that Engineers have higher incomes than Physicians, Dentists, Lawyers and Accountants. What is wrong with this picture? 1. Only the Consulting Engineers were considered, or only the most successful 5 percent of the engineering profession, as compared with general cross-sections of the other professions. 2. The names of Consulting Engineers to be canvassed were handpicked by the American Engineering Council, as compared with random sampling of the other professions. 3. Only 415 usable returns were received from Consulting Engineers as compared with 2000 to 5500 usable returns from each of the other professions. 4. The survey for Consulting Engineers covers only 1929 and the beginning of the depression, whereas the survey for the other professions goes right through the depression to 1936. 5. The survey shows that the average income of the (handpicked) Consulting Engineers was higher than the average income of the other professions in 1929, and this was featured in the newspaper reports; but the survey also shows that the average income of the same Consulting Engineers was at the bottom of the graph (lower than physicians, dentists, and lawyers) in 1932, and this fact was not featured in the newspaper reports. 6. The report itself states that "little can be deduced from our data about the relative standing of consulting engineers" in the comparison of incomes from the professions. Nevertheless this is the kind of comparison used in propaganda to stimulate engineering enrollment.

* * *

"Engineering education which is too specialized turns out men specialized for jobs of which there may be only a few vacancies. The head of an engineering department who is unable to place his graduates in industry will find himself faced with an irrefutable argument."

"A movement which emphasizes too highly the differential between the various types of engineers will produce an intracompetition between the various branches equal to that between engineers and architects. *A divided profession* means a series of minor professions."

"Unless one is merely trying to train technologists, to deprive the engineering student of *a reasonably large access to other types of personality, other domains of knowledge, and other types of thinking* than engineering, is to lead him to unconsciously conclude that the engineering domain is exclusively the only desirable one. Prejudices of this sort which insulate a student against new ideas outside of engineering would be extremely dangerous to him."

The foregoing are quotations from a paper by Daniel S. Elliott, Professor of Physics, Tulane University, at the 1938 annual meeting of the S.P.E.E. in Texas. To all of these excellent statements we say amen, despite the fact that they are used by the author in a paper in which he ignorantly attacks Engineers' registration for the very evils which the registration movement is seeking to correct.

* * *

Engineering graduates of the class of 1928, Cornell, were recently canvassed for comments on their engineering education. The following replies are quoted in the S.P.E.E. Journal:

"Aside from the technical phase of an engineer's education, let me add one more wail to the old theme that we didn't get enough so-called Classical subjects. *You should place anyone in jail who graduates with an M.E. degree and doesn't know any more about economics, philosophy, history, languages, etc., than I did when I got out.*"

"My strongest opinion in the matter of engineering education concerns itself with the fundamentals that were taught us in the first two years. I believe that the most valuable subjects thrown at us were those which most nearly approached *pure science*. Such subjects as Calculus, Physics, Chemistry, Mechanics, Kinematics, Heat-Power, and Basic Electricity all sort of sink into your consciousness and become part of you when the more detailed subjects are forgotten."

"If I were doing it all over again, I would concentrate on the *fundamental sciences* and let the specialist studies go by the board. Unless a lad has a pretty good idea of what he is going to do after graduation, and most have no idea at all, he is apt to gather a lot of dunnage in his head when he might be improving the broad foundation of his learning with more fundamentals."

* * *

Cornell sends a questionnaire annually to its recent engineering graduates to determine their employment and occupation. The report states: "The first year after graduation between 80 and 90 percent of the men generally reply. In succeeding years, the response drops to a low, usually in the fourth year, when between a 50 and 60 percent return is obtained. This year slightly better than a 50 percent return was received from the ten-year follow

up letter to the class of 1928. *Undoubtedly a good many men in these classes found it difficult, if not impossible, to obtain employment, especially employment in work for which they had been trained.* Apparently *reticent to report no work,* or else thinking that their report would be of no significance if they were not in engineering work, a larger percentage of men than usual failed to reply."

* * *

A survey, extending over a twenty year period, made by an Eastern university, showed that *only ten percent* of the engineering graduates were following work in the course studied.

* * *

The late Dr. J. A. L. Waddell stated: "Possessing a mastery of the English language, the engineer may or may not rise to eminence; but without it, he certainly cannot."

* * *

According to Harold J. Gallagher, Section Chairman of the American Bar Association, the movement is rapidly gaining headway for the so-called *"integrated state bars."* In 18 states, either by statute or by judicial rule, *every lawyer must be a member of the state bar organization.* These integrated state bar organizations are given broad powers and responsibilities for administration, regulation, and self-improvement of the profession, as a public trust.

* * *

Attorney Gallagher reports that the organized bar is now studying and attempting to remedy the overcrowding of the bar. "An enormous number of new lawyers are admitted to the bar in each year. Between 1929 and 1934 the total number of lawyers in the country increased nearly 24 percent. The number of *consulting engineers* decreased during the same period by 10 percent." (Evidently the consulting engineer is a vanishing species. A few more depressions will reduce the "consulting engineer" to a mere legendary place in the history of the profession.)

Beginning in 1921, the American Bar Association took a definite, active stand to require stricter standards for admission to the bar. "It is becoming recognized generally that the practice of the law is a privilege rather than a right, and that the *public interest* requires that lawyers, in order properly to equip themselves to meet the complex legal problems of the day, must have *a broad pre-legal education* as well as a thorough legal education."

* * *

One committee of the Association of the Bar of the City of New York, the committee on ethics and practice, spends over $20,000 annually in its work, maintains a paid counsel and staff of assistants, receives and investigates a vast number of complaints, and carries on the actual court prosecutions.

* * *

A recent survey by the Special Committee on Economic Conditions of the Bar, appointed by the American Bar Association, shows that at the end of the third year of practice, one-third of the young California lawyers and one-fifth of the young New York lawyers were earning less than $1000 a year. "The bar itself is striving mightily to improve the situation. It is sponsoring *vocational guidance* in some of the states to urge young aspirants not so well fitted for the profession as others *to seek other fields* than the law."

* * *

In a symposium on the Professions at the annual meeting of the Am. Soc. C. E., January, 1939, Dr. Charles Gordon Heyd, Past President of the American Medical Association, said:

"If the American Medical Association did not exist it certainly would be invented, for it came into being in response to the demands of society. The American Medical Association is composed of over 106,000 members. It is a federation or union of the several state medical societies, under a central authority."

"In 1905, the Council on Medical Education was founded and it became the chief agency for improving the quality of medical schools and thereby obtaining a more competent education of doctors. . . . In 1905, there were in existence about 165 so-called medical schools, most of them proprietary. Under the influence of the organized public opinion created by the council, this number was reduced to 65, with elimination of all proprietary schools."

"The medical profession considered this program (of raising the level of medical education) so important, to the public and to the profession, that the American Medical Association has expended *over one million dollars* on this one objective since 1905."

In summarizing the symposium on the Professions, and applying it to the engineering profession, Carlton S. Proctor, representing the Am. Soc. C. E., stated:

* * *

"All three of these professions (Medicine, Law, and Architecture) realized years ago that a professional man cannot be produced in four years of educational training and that low educational standards inevitably result in turning out graduates in annual numbers far beyond society's and industry's ability to make places for them. . . . An eminent engineering dean recently blamed the competition between engineering schools for much of our difficulty, stating that in the scramble for students to fill 160 schools of engineering, standards of admission and performance are being constantly weakened.

"With demands upon the engineer increasing daily and his needs for equipment to cope with leaders in all walks of life becoming daily more exacting, he is asked to assimilate a steadily increasing technical curriculum at the sacrifice of training *in the humanities and cultural subjects.*

"With the training for architects, lawyers, and doctors requiring *a basic undergraduate academic course in the humanities* followed by a post-graduate professional training; with the standards of education rapidly rising for men in all walks of life; and with scientific and technological advancement and opportunities setting an unprecedented pace, are not the engineers obtaining but a glorified trade school training instead of a real professional education? Are not the young engineering graduates cursed with *an inferiority complex* when they come in contact with the more thoroughly educated men of other professions? And are they not confused in their minds as to whether they are in a profession or a trade? . . . Is it not time we should agree that a professional man cannot be produced in four years, but that an accredited civil engineering training must be definitely postgraduate, with a broad undergraduate training as a prerequisite?"

"It requires plenty of *determination and fortitude* to challenge the institutions of professional education; to force the abolition of competition for students between engineering schools; and to impose a strict self-discipline on the profession. But the fruits of such efforts are the objectives we seek. Only by making our profession worthy of 'status,' can we attain our aims."

* * *

In an address before the S. P. E. E. last year, President Philip C. Nash, of the University of Toledo, said: "No other profession, such as law, medicine, teaching, or the

(Continued on Page 23)

Broader Training for Engineers

(Reply to Engineer Steinman's Article in the August-Sept. issue)

By **T. V. BOUGHTON**

Managing Editor, Engineering News-Record

Strong endorsement of a resolution calling for a longer period of pre-engineering training for engineering students, adopted at the last annual meeting of the National Society of Professional Engineers, was expressed by D. B. Steinman in the August-September issue of THE AMERICAN ENGINEER. Dr. Steinman will find wide support for his beliefs that two years of pre-engineering training in the humanities will broaden young engineers and make them more useful citizens, but he will find much less support for his proposal to write such a requirement into our license law, either as an optional requirement as he now proposes, or as a mandatory requirement as was attempted in New York State last winter. Dr. Steinman cites twenty prominent engineers as in favor of pre-engineering college education, but it should be noted that these engineers endorsed the general idea and not his specific proposal to write such a requirement into our license laws. A poll of the same twenty engineers on the latter point would, I believe, show few of them to be in favor of such a proposal.

In considering Dr. Steinman's proposal, it is well to reflect that the sole purpose of an engineer license law is to protect the public from incompetence. These laws were not put on the statute books to improve the cultural training of engineers of the future. Hence, the requirements that are written into those laws should be only the *minimum* educational training and *minimum* practical experience that an engineer must have to obtain a license. Educational requirements that have no relation to skill in the design of safe structures or machines have no place in such a minimum listing. Certainly there should be no requirements whose only purpose is to "encourage" the high school boy who aspires to be an engineer to spend two more years in college—for it is in the high school period that the decision as to college training must be made.

There are only two ways in which educational requirements can be written into a license law, either they are made mandatory or they are put in as an alternative to some requirement for practical experience. Dr. Steinman now proposes to make the proposed two years of non-engineering study a substitute for two of the four years of practical experience now required in the model law and in many state license laws. What does that mean? Well, if it means anything it is an admission on the part of the engineering profession that the four years of practical experience required in the model law are two years too many! When we set out to substitute two years spent studying cultural subjects for two years of practical experience *"of a character satisfactory to the board"* we are starting to knock the foundations from under our license laws. If we can safely let prospective engineers while away two years in the pleasant pastime of taking a cultural course in college as a substitute for two years of hard work in the field or at a design department drafting board, are we not telling the public that a young man can gain the necessary *practical* experience in two years? Certainly we are. And if we can cut the practical experience requirement for the favored boy who can spend six years in college we must cut it for the boy who must get his engineering training in the back office and at night school. No amount of fine words will hide the logic of that fact.

What the Records Show

Dr. Steinman lists a number of prominent engineers who had pre-engineering training. He also gives an impressive list of engineers who had liberal art education and no formal engineering education. I could add a third list of great engineers who had neither liberal arts nor engineering education. It would include such men as John F. Stevens and Robert Ridgway, and of course most of the great early pioneers in engineering. But turn to his second list, those who had liberal arts education and no formal engineering education. What does it prove? Clearly it does not prove that "a thorough mastery of the fundamentals of the basic engineering sciences with an introduction to the problems of professional practice cannot be adequately covered in two years of a four-year [engineering] course." The engineers in Dr. Steinman's second list appear to have acquired these fundamentals without any formal engineering education.

Thus we have among our prominent engineers four principal groups: Many who had no college education of any kind, many who took engineering with whatever cultural studies could be sandwiched in, a few who took an arts course of some kind, but no engineering, and a few who took both cultural and engineering courses. What does this show? If it shows anything, it shows that it is the *man,* not the *scholastic training* that counts in the making of an able engineer. In other words, give a boy with engineering instincts and ambitions an opportunity to absorb the fundamentals of engineering and he will develop into an able engineer regardless of whether the fundamentals are buried in the science courses of an art school or acquired at a drawing table in the back office with some supplementary night school work.

Other Professions

What the doctors and lawyers have done in raising their educational requirements frequently is cited in support of proposals to raise those for the engineering profession. I see no reason for shaping our course in the advancement of engineering by what the doctors or lawyers have done. The long scholastic training now required for young doctors may have been set up in an honest belief that it was necessary, but it may also have been set up chiefly to limit the number of men who seek to become physicians, thus cutting down the competition for those already practicing in that field. But those who hold up the doctors as an example should know that some prominent physicians have proposed that the present requirements be reduced so that students reach interneship at a younger

age than now is possible, at an age when they absorb knowledge faster and are more enthusiastic to learn. Those two latter qualifications are particularly important in engineering. We should not keep young men in college so long that they will not be willing and anxious to knock around a few years after they get out, seeing the world and picking up a variety of practical experience in engineering.

Secondary Schools

In most discussions of engineering education we overlook the changes that are taking place in our secondary-school training and the possibilities for further improvement there. Boys who show aptitude for mathematics and who express a preference for engineering training now are segregated and pushed along in mathematics and the sciences, with the result that they reach college with a much better grounding than was the case a few years ago. It may be possible to carry this trend farther, thus giving more time for cultural studies in college without increasing the total time spent there.

Looking Ahead

But I do not want to be wholly destructive in my criticism of Dr. Steinman's proposal to add non-engineering educational requirements to our license laws. May I suggest that we explore the possibilities of giving prospective engineering students better secondary-school preparation? Dr. Steinman's board might lead the way by putting such a proposal before the committee that the New York State Department of Education has set up to study his recommendation that higher educational requirements be written into the New York State license law.

A second suggestion is that the state professional societies establish a junior grade of membership which will be open to all men who expect to become licensed engineers. At the same time, these societies should revise their requirements for full membership to limit such membership to licensed engineers who have taken a prescribed course in college or night school or who can pass an examination in a similar course obtained by home study. The subject covered would be essentially the most useful of those that would be obtained in the 2-year pre-engineering course that Dr. Steinman would add to the license requirements. The young man who has taken such pre-engineering training will be advanced thereby to a preferred position in seeking membership in the state societies; the boys who cannot afford such training can use the periods between graduation from an engineering school and their examination for license to study and earn credits in these cultural subjects.

Such a plan would appear to be in line with the proposals of the Engineers' Council for Professional Development for post-graduate study; it would also add distinction to full membership in the state professional societies. Further, it would pave the way for the state societies to take the sub-professional men under their wings, the forgotten men who now have to look to trade unions for help in solving their problems.

License laws are for the protection of the public—not for the advancement of any particular profession. Changes that we may hereafter make in the license laws, therefore, should be limited to those required to eliminate ambiguities or to simplify enforcement. If the profession is sincere in its expression of a desire to raise its standards, it should attempt to raise those standards by voluntary self-education, not by setting up wholly artificial legal requirements for a license to practice engineering.

Reply by D. B. Steinman

Mr. Boughton makes the same mistakes as many others do, of describing the proposed amendment as a proposal to write a "requirement" into the licensing law. He repeats this eight times in his paper. It is not a "requirement" that is proposed, but merely a *permissive credit.* It does not impose any requirement on any one,—student, school, profession, or Licensing Board. It is simply a proposal to add a single sentence to the present law, as follows:

> *"For additional approved educational preparation, either pre-engineering or post-graduate, in a registered college or school of engineering or in a registered college or liberal arts and sciences, each year of such additional study satisfactorily completed may be accepted in lieu of one year of the specified experience requirement, with a maximum of two years of such credit."*

In the present New York State law, it is now permissive for the Board to give additional year-to-year credit for post-graduate study, with no minimum limit for the residual experience requirement.

There is nothing sacrosanct about the 4-year period for the experience requirement after graduation; otherwise the present permissive year-for-year credit for graduate study would have to be expunged from the law. The 4-year figure is arbitrary, and is out of line with the requirements for admission to the other professions. There is no logical reason why it must be 4 years, rather than 3 or 2. It is a vestige of the earlier apprenticeship tradition of the profession, which has been superseded by the present educational picture. The total experience requirement (12 years in the New York law, for non-graduates) is best regarded as a reserve of credits to encourage desired educational preparation. It is not a question of equivalents, but rather of alternatives. The determining criterion should be the ultimate good of the individual, of the profession, and of the public. In the long run, it matters little to the profession and to the public if an individual, after completing his professional education, is admitted to the licensing examinations two years earlier or two years later. The encouragement of superior educational preparation is far more important to the future of the individual and of the profession, and to the highest usefulness of the individual and of the profession to society.

My lists of such men as General Goethals, Clifford M. Holland, Gano Dunn, Alfred P. Sloan, and many others, who had the benefit of pre-enginering college education are admittedly incomplete and can be greatly extended; so can my lists of such engineers as Alfred W. Craven, George S. Morison, Dr. Charles F. Scott, W. H. Coverdale, and many others who founded their careers on a complete liberal arts college education without any formal engineering education. I admit that longer lists can probably be prepared citing men who had no pre-engineering college education, but I doubt whether such lists would be any more distinguished or *proportionately* greater in numbers. I believe that, considering the small percentage of engineers (perhaps only 5 to 10 per cent) who have had a pre-engineering college education, their *relative* number showing distinction, achievement and leadership

is above that which would be indicated by the law of averages. It is also true that lists can be cited of engineers who had no formal education at all, but this does not prove that lack of education is a blessing; it merely proves that there is also alternate value in the school of experience, and that is why experience is also given credit in the licensing law. Moreover, mere apprenticeship without formal education is a rapidly vanishing element of the professional picture. We have reached the stage where only about one per cent of the candidates for engineering licensure are in this category.

The essential point, and that is all any such lists prove, is that the several avenues or steps of professional preparation have their respective values,—pre-engineering college education, engineering education, post-graduate studies, and experience. That is why all effective avenues of preparation should be recognized and credited in the licensing law. The proposed amendment does this. It does not close any doors; it opens all. It does not regiment; it increases flexibility and range of individual election. It imposes no additional requirement; it offers a slight compensation to those who have elected a more complete and more expensive preparation.

In this connection, it should be noted that most of the men in my lists of engineers who had a pre-engineering college education as a foundation for their careers were sons of poverty, not scions of wealth.

Although a very small minority in the medical profession (generally old-timers who had a different preparation) are still arguing against the requirement of two or more years of pre-medical college education, we are assured by the leaders of medical education that their profession will never go back to the narrower and less thorough educational preparation that prevailed before 1905. That the longer period of preparation does not limit the number of medical students is proved by the fact that the annual number of applications for admission is many times greater than the capacity of the medical schools. This enables the schools to select those of highest aptitude and preparation, to give a more thorough and intensive training within the medical school, and to turn out, for the service of the public, men of highest educational and technical preparation to serve as members of a truly learned profession.

Although licensing laws are primarily for the protection of the public, there are broader aspects of public welfare to be considered. It *is* in the public interest and for the public welfare to raise the standards of a profession,—the standards of educational preparation and of capacity for high service. And despite the efforts of some to limit and restrict the scope of licensing legislation, the registration law is the logical and necessary place in which to record the various recognized avenues of preparation for professional admission and to assign respective credits to these alternative steps or avenues of preparation.

Our governing aim is a better profession. My chief consideration is the future of the engineering profession. We want the best possible preparation for the engineer of the future, and that means the education of a professional man and not that of a mere technician. To recognize and encourage progress toward that goal is not anti-social. It is for the best ultimate interests of the individual student, the profession, and the public.

RESOLUTION

NIAGARA COUNTY CHAPTER, NEW YORK STATE SOCIETY OF PROFESSIONAL ENGINEERS

WHEREAS, The Niagara County Chapter of the New York State Society of Professional Engineers has suffered irreparable loss in the passing of Percy E. Blood, whose interest, loyalty and efforts for the welfare of the Profession were of inestimable value, now therefore,

BE IT RESOLVED, by the Niagara Chapter that expressions of sympathy be transmitted to the bereaved family of Engineer Percy E. Blood, and,

BE IT FURTHER RESOLVED, that this Resolution be entered upon the records of the Chapter; the original be presented to the Family; a copy be transmitted to the New York State Society and, to the American Engineer and the Niagara Falls Gazette.

By instructions of the President
And the Board of Directors, this
Fourth Day of October, 1939.

J. W. NAYLOR, Secretary

RESOLUTION

MIDWESTERN CHAPTER, PENNSYLVANIA SOCIETY OF PROFESSIONAL ENGINEERS

WHEREAS, Divine Providence, Who giveth and Who taketh away, both in His infinite wisdom and mercy, has seen fit to take from us one who was esteemed and beloved by us; and,

WHEREAS, This one whose passing we mourn, was himself a creator, an engineer, whose life was spent in the service of his fellowmen, creating works whereby his City, his State and his Nation were the better for his having labored among us, and who, ever active in organizing Midwestern Chapter, was our State Delegate and who said at our New Castle meeting held this year, "It is not what I may personally gain from this organization but for those young engineers who come after us that I give heart and work to Midwestern Chapter's organizing"; and,

WHEREAS, On the day of October sixteenth, one thousand nine hundred and thirty-nine, A. D., this Engineer, this friend, was touched by the finger of Almighty God and called Home.

THEREFORE BE IT RESOLVED: By the Midwestern Chapter of the Pennsylvania Society of Professional Engineers, and it is hereby resolved, this fourth day of November, one thousand nine hundred and thirty-nine, in meeting assembled, that we express our sorrow at the loss of a Member, Counselor and Friend, Engineer Thomas A. Gilkey, and that our sympathies be extended to relatives with whom we mourn his passage to that Land from Whose Realm no traveler ever returns; and,

BE IT FURTHER RESOLVED; That the Secretary be requested to communicate these Resolutions to relatives, wheresoever they may be.

MIDWESTERN CHAPTER
Secretary-Treasurer

RESOLUTION

ADOPTED BY BRONX COUNTY CHAPTER NEW YORK STATE SOCIETY OF PROFESSIONAL ENGINEERS ON THE DEATH OF ENGINEER HARRY MCKEAN CONNER

WHEREAS, Engineer Harry McKean Conner was a member of Bronx County Chapter for many years, and

WHEREAS, he served Bronx County Chapter faithfully and well as chairman of various committees, as Chapter Secretary, and as a member of the Board of Directors, and

WHEREAS, he was held in high esteem by our members for his professional attainments and for his sterling character and lovable personality, and

WHEREAS, our members feel a deep sense of personal loss since he recently departed this life, and

WHEREAS, our members are appreciative of the great loss occasioned to Engineer Conner's beloved wife by his untimely death.

THEREFORE, BE IT RESOLVED that the members of Bronx County Chapter of the New York State Society of Professional Engineers extend to Louise F. Conner their heartfelt sympathy in her bereavement and their sincere hope that God will give her the strength and courage to bear up under her loss.

VICTOR DI MARIA, *Secretary*
WILLIAM L. A. ARCTANDER, *President.*

NEWS OF STATE SOCIETIES

Editor's Note: THE AMERICAN ENGINEER will carry reports of State and Chapter meetings in the issue succeeding their receipt. We must have copy by the 20th of the month preceding the month of issue. Copy received after that date runs the risk of not being on time.

CONNECTICUT

REPORT OF LEGISLATIVE COMMITTEE

Connecticut Society of Professional Engineers

As the Connecticut State Legislature was to meet early this year with a full calendar with many bills either directly or indirectly affecting the engineering profession, or of particular interest to them as an organized body of citizens, this Committee made a preliminary study of these bills and its Chairman personally contacted the Governor, leading statesmen and State Senators and Representatives of the three principal parties for their opinions and reactions and to enlist their support in behalf of the profession, particularly in regard to the Bill to reorganize its Registration Board. In all its work, the Committee was steadfast in eliminating anything that might be construed as partisan politics.

On January 27, 1939, a State wide meeting of Registered Professional Engineers was held in the State Capitol, Hartford, under the auspices of the C. S. P. E. Legislative Committee, open to all registered engineers in the State whether members of the C. S. P. E. or not. This large State meeting was attended by his Excellency, Governor Raymond E. Baldwin, Hon. James B. Lowell, his Executive Secretary and also by invited Senators and Representatives from the different political parties.

Twenty-eight different legislative bills and items were discussed at this State meeting and careful notes were made of the reactions and sense of the meeting to be digested at a later meeting of the Legislative Committee.

As this work has been quite extensive, requiring many interviews, much correspondence, many meetings of the main committee and of its various sub-committees, I will merely give the following brief resume.

1. The Bill to consolidate the Engineers Registration Board with 21 other State Licensing Boards was opposed in the previous Legislature (1937) and did not pass. It was again (1939) opposed, appearances made at the hearing and again a brief was submitted. Again it did not pass. This bill would have placed the Board directly under an appointive Executive Secretary having dictatorial power over the finances and activities of 21 consolidated licensing boards, licensing professional, quasi-professional, trade and business activities, which could have been abused and converted into a political racket. Various other questions affecting the Registration Board and Registration Law were considered and held over until the 1941 Legislature for definite action.
2. The bill to license operators of engines and power plants. While favorable to laws to insure safety and the selection of competent operators and willing to co-operate with the operators, the unanimous vote at the January 27th State meeting was to render support only to a power license Bill that did not wrongfully use the designation "Engineer" to describe the operators. The Bill as presented used the term "Power Engineer" and did not therefore receive our support and did not pass.
3. The Bill for a State Labor Relations Act similar to the National Labor Relations Act was not supported by the Engineers and did not pass.
4. The appropriation of funds for the Connecticut State College was supported and appropriations passed.
5. A study was made of Governor Baldwin's request for an opinion on his proposal to change the Connecticut Auto Inspection System. Our engineering opinion was submitted to him supporting his views in general and in spite of much partisan political opposition at the General Assembly the inspection system was abandoned. It is only fair to report that many are in favor of an inspection system of some kind.
6. A study of Governor Baldwin's economy program was made and a resolution was offered by the Committee and approved by vote of the Society as follows:

   "Whereas, Governor Raymond E. Baldwin has initiated a program of economy in government in the State of Connecticut, designed to maintain the essential functions of the government as affecting public and private welfare, and to eliminate expenditures disproportionate to the values returned to the citizens of the State, Be it hereby Resolved, that the Connecticut Society of Professional Engineers support the administrative program of Governor Raymond E. Baldwin."

   Governor Baldwin's unyielding fight to carry through his program of economy has fully justified this action of the Committee and the Society which were influenced by partisanship in the debates and decisions.
7. At the January 27, 1939, State meeting of the Registered Engineers, Governor Baldwin specifically asked the C. S. P. E. to name a State Safety Committee of Professional Engineers to furnish a "scientific, factual appraisal of the problems of government, entirely and completely divorced from wishful thinking" on such subjects as highway lighting, intersection dangers, flood control, water survey, auto inspection, organization, unemployment, highway safety, public buildings and maintenance, stating that "We need our professional engineers in every phase of governmental activity." The Legislative Committee submitted a resolution covering the Governor's request to the Annual Meeting of the C. S. P. E. in March and it was unanimously approved and it then became mandatory for the Society President and Board to name the members of this State Safety Committee, which is now in the process of selection and organization.
8. At the January 27th meeting in Hartford it was voted that a bill be presented to the Legislature amending the Merit System (Civil Service) to include specific rules regarding professional engineers and giving sufficient credits for actual experience and record. Due to shortness of time, this was referred to the Legislative Committee for preparation and submission to the 1941 Legislature.

9. At the January 27th meeting it was voted that the State Water Commissioners having "full powers of supervision over all dams and reservoirs and all parts of their structures, to make rules and regulations for the construction, use, repair and maintenance of reservoirs and dams, to make inspections and test strength and safety, to complete and approve alterations and repairs, issue certificates of approval and approve dam sites," should all be Registered Professional Engineers and that a State Board of Professional Engineers be set up to act for and advise the State in all matters largely of an engineering nature. A sub-committee was appointed and reported that it had conferred with the State Water Commission and that steps were being taken to forward this matter and follow its progress. Now that the Legislature Session has adjourned the preparation of a suitable Bill for presentation to the 1941 Legislature is to be undertaken by this Committee.
10. The proposal to reduce the State Registration fee from $2.00 to $1.00 was dropped.
11. There were other items of comparative unimportance to our members as engineers but of interest as citizens which were watched by the Legislative Committee. Those deemed unfavorable to the engineering profession fortunately were given scant consideration by a Legislature burdened by a heavy calendar which included making certain internal reforms in its own organization.

In conclusion, I would say that in general it is to the best interests of the profession and the Society to select for their Legislative Committee personnel, engineers who are relatively free agents and who are not constrained by strong party affiliation, official employment, or as public sellers of services or materials to governmental agencies. While in no way reflecting upon broad guage, honest engineers who live up to the Code of Ethics in such conditions or positions, it is unfair to place them as members of this Committee in a position where on the one hand their actions and motives may be open to criticism by their political confreres or employers and on the other hand by their fellow engineers. I mention this as some members of our Committee frankly admitted the unfortunate position in which they were placed because of matters submitted to the Committee for its action, by members of the profession. Its members should be able as far as possible, to work freely, fairly and judicially without personal and partisan bias.

Respectfully submitted,

HARRY E. HARRIS
J. D. SKINNER

Legislative and Law Committee, Connecticut Society of Professional Engineers, Inc.

INDIANA

I. S. P. E. NEWS LETTER

Issued by Indiana Society of Professional Engineers, Inc.

ENGINEERS AS A GROUP

From an article by Perry T. Ford, President of the National Society of Professional Engineers, appearing in August, 1939, issue of *The West Virginia Engineer.*

"We are not capable of discerning a mechanical or a civil or an electrical engineer merely by looking into their faces; but if they are registered engineers regardless of the branch of engineering they pursue, then we know that each has something in common with the other. We are not interested in the branch of engineering as such when we have his professional status under consideration.

"The chaotic condition of the engineering profession is due, in a large part, to the refusal of one branch of engineering to associate itself properly with another branch of engineering. This is exemplified in the fact that the mechanical engineer has gone his way, the civil engineer has gone his way, the mining engineer has gone his way, and so on down the line to a point where they have steadfastly refused to think in terms of the one thing that each holds in common and that is their professional consciousness and allegiance.

"The National Society of Professional Engineers endeavors to coordinate the professional aspect of all branches of engineering without regard to their branch practice. It throws open the door to all those who can legally qualify for registration and limits its membership to those only who have met the legal requirements prescribed by his native state.

"The sooner engineers realize they have something in common—the sooner they recognize mutual problems—the more apt they are to develop group consciousness and to partake liberally of the benefits that will accrue to the profession."

We repeat this portion of President Ford's article because it states so clearly just what is the aim of the National Society of Professional Engineers and of the 24 state societies which make up the national body. Each registered engineer in the State of Indiana can put his shoulder to the wheel in the fight for professional recognition by becoming a member of the Indiana Society of Professional Engineers and by entering wholeheartedly into its activities.

ANTHONY WAYNE PICNIC

The annual picnic of the Anthony Wayne Chapter, held on August 26th at Oliver Lake, was, as usual, a very pleasant and successful gathering. There were about 130 present, including members of the Chapter, their families, and a number of invited guests. Several engineers from other states were present, and President Perry Ford of the N. S. P. E. drove from Columbus, Ohio, for the affair. The State Society was represented by Vice-President Walb, the genial host of the whole party, National Director Walker, Directors Cohen, Meitz, and Biberstine, and Secretary K. B. Wolfskill. L. L. Dillingham, Secretary of the Calumet Chapter, was also a guest.

Limberlost Camp, on the east side of Oliver Lake, northwest of Kendallville, was taken over for the afternoon and evening. Swimming, boating, bridge, and the inevitable horseshoes were enjoyed by the engineers and their wives. Amidst cries of "frameup", the final contest in horseshoe pitching was between Engrs. Cohen and Perry Ford. Since both are officers in N. S. P. E., it might have been said that the U. S. Championship was at stake.

The dining hall at the Camp was the scene of the dinner, and what a dinner, with chicken and all that goes with it. Following the banquet, short talks were made by Engrs. Walb, Cohen, Walker and Ford. Engr. Walb reported on the long struggle down through the years, for recognition of the profession. Engr. Cohen discussed the continuing interest being shown in the Society by its members and local sections, and Engr. Walker spoke on the matter of enforcement and its problems. President Ford of N. S. P. E. brought to us the late developments of

interest to all of us, nationally, and told of the organization of a Society in Minnesota.

Dancing followed the banquet and others gathered in small groups, discussing the various common interests of engineers and their wives and families.

Again we say, thank you, Anthony Wayne, and Clyde Walb and his family, for a very pleasant gathering.

MEMORIAL DEDICATION

On October 22, 1939, the Society and its members will participate in the dedication of the Stotsenburg-Fritz Memorial, symbolizing the recognition by the group of the contribution to the development of Indiana highways by these two men. In this day of close and intimate relationships between individuals in all parts of our state, and of our nation, nothing is more vital to our peace-time unity than our highway system. To have given to the growth of that system, in no small measure, was the lot of George Fritz, first Locating Engineer for the Commission and first member of the staff to die in the service, and of Judge Evan B. Stotsenburg, one time Attorney General of Indiana and Member of the State Highway Commission. Each man gave of his own talents and energies, and the Society pays tribute to each as a public servant.

The bronze tablets, recording for us and for the future the grateful appreciation of these pioneers will be dedicated at 2 p. m. on the afternoon of Sunday, October 22, 1939, in the Roadside Park, one mile east of Leavenworth on State Road 62.

NEW MEMBERS

We are very pleased to welcome into the State Society as new members:

Thomas McDonald, Chief Engineer, Louisville Cement Corporation, Speed, Indiana.

Arthur Haufler, Individual Practice, Indianapolis, Indiana.

MONTHLY MEETINGS

The monthly meeting of the State Chapter of the Society was held on Thursday, Sept. 21, in the Indiana World War Memorial at Indianapolis.

The Calumet Chapter holds its meeting on the first Wednesday of each month in Gary.

The St. Joseph Valley Chapter holds its meeting on the second Wednesday of each month either in South Bend or LaPorte.

The Anthony Wayne Chapter held its most recent meeting Sept. 28 at the Chamber of Commerce in Fort Wayne.

NEW YORK

HERE'S HOW!

New York State Society of Professional Engineers, Inc.
Kings County Chapter

Important Notice

Members of Kings County Chapter:

Those of you who attended our meeting in June will recall that consideration was being given to a plan for making our services as individual professional engineers more readily available to lawyers, accountants and others through appropriate advertising media such as the *New York Law Journal,* and a systematic listing of the names and qualifications of those of our members who might desire to offer their services under such a plan.

Considerable progress has been made since June. Vice-President Fouhy has been active with representatives of the other chapters in the metropolitan area in making cooperative arrangements with them and with the headquarters office of the State Society for the effective execution of the plan.

However, before we can put the plan into effect, we must have some names to list. The response to our request in the June meeting notice was too meager to warrant our Chapter in participating to the extent that would otherwise seem appropriate. New York County Chapter members, on the other hand, have responded enthusiastically and in large numbers. It may be that this matter has escaped the attention of our members or that it has not had sufficient publicity.

Briefly, this is the idea. Any member who so desires may have his name, address, telephone number, experience and type of professional service he is prepared to render recorded on a card which will be kept in a classified file at the headquarters office of the State Society. The State Society will advertise the availability of such professional engineering services in an appropriate manner and inquiries will be addressed to that office. The office will then furnish on request the names of one or more engineers having the desired qualifications.

Initially, your chapter will underwrite its share of the expenses of the plan so it costs you nothing to be on the list. Depending upon the success of the plan, the number of members who participate and the Chapter's wishes, there might ultimately be a nominal renewal charge assessed against the individual members listed.

If you desire to have your name on the list, please fill out and mail the form below immediately.

Very truly yours,

GEORGE A. DORFMAN,
Secretary.

Engr. GEORGE A. DORFMAN, Sec'y
Kings County Chapter—N.Y.S.S.P.E.
117 Remsen Street, Brooklyn, N. Y.

I am free to engage in consulting work and desire to have my name listed in accordance with the plan set forth in your circular.

(Please print or type all the following information)

Name .....
Address .....
Telephone No. .....
Brief statement of experience .....
Type of service offered .....

MINUTES OF MEETING OF THE EXECUTIVE BOARD OF KINGS COUNTY CHAPTER OF THE NEW YORK STATE SOCIETY OF PROFESSIONAL ENGINEERS AT THE BROOKLYN ENGINEERS' CLUB HOUSE NO. 117 REMSEN STREET, BROOKLYN, SEPTEMBER 21.

Present: James F. Fairman, President, presiding.

George A. Dorfman, Secretary, recording.

1st vice-president Louis A. Walsh, 2d vice-president.

James F. Fouhy; Directors Joseph Fertik, Gustave Freeman, Benjamin Joachim, Irving J. Lake, Frank H. Sewall, Frederick Van Olinda, Hyman Cleon, John T. Dollard, Harry S. Lewis, Gustav Mueller and Fred Wackenhut: Advisory Councillors.

Charles W. Burke, John Charles Riedel and Frederick Ward, and by request Engr. Homer G. Shockley, member.

President Fairman announced that one of our members HOMER G. SHOCKLEY was given permission to appear before this Board at 8 P. M. with the idea that he be allowed twenty minutes for a discussion on Technocracy.

President Fairman stated that the State President, Frederick H. Zurmuhlen, had accepted his invitation to be present at our first Fall meeting on October 19, 1939. After a discussion it was decided that a dinner be held preceding the next Chapter meeting on October 19th at 6 P. M. in the Bermuda Terrace room of the Hotel St. George. All of the Board members present to night signifying their intention to be present at the dinner and State President Zurmuhlen is to be invited by President Fairman to be the Chapter's guest at dinner.

President Fairman announced that the Executive Board meeting of the State Society will be held on Wednesday October 4, 1939 at the office of the new headquarters of the Society Room 1941 Grand Central Terminal Building. Reference was made to the minutes of the last meeting of the National Society appearing in the AMERICAN ENGINEER stating that copies of the magazine would cease with that issue if members are in arrears for 1939. Since the membership status of members in arrears conflicts between National, State and local Chapters it was decided that our Resolution and Membership Committees unite in drafting a resolution clarifying membership status in regards National, State and Chapters.

Communication dated July 20, 1939 from State President Zurmuhlen notifying all Metropolitan Area Chapter Presidents that through the efforts of Engr. Harry P. Moran, a member of Kings Chapter, a definite ruling has been made by Administrator of the WPA in New York limiting the use of the title engineer to those having a degree from a recognized engineering and/or architectural school or a license as a professional engineer and/or architect in the State of New York.

Communication dated August 11, 1939 from State President Zurmuhlen urging action in collecting arrears of dues from delinquent members.

Communication dated June 16, 1939 from State President Zurmuhlen relative to the appointment of a Legal Committee in the State Society and President Fairman's reply of July 28, 1939 suggesting that Engr. James F. Fouhy of our Chapter, a member of the Bar, be appointed on the State Legal Committee.

Communication dated August 22, 1939 from State President Zurmuhlen requesting names of members of our Chapter for a place on each of the following Standing Committees of the State Society, viz.: Membership, Publicity, Legislative & Grievance and Ethics and Practice, and President Fairman's reply dated August 28, 1939 stating that he could get the names of our Committee Chairmen on the letterhead.

At this point S. P. M. Engr. Homer G. Shockley appeared and was informed that he had twenty minutes in which to give his views on Technocracy. In the discussion the following took part Engrs. Freeman, Riedel, Dollard, Ward, Joachim, Fertik and Burke, and the discussion ended at 9 P. M. with a motion made by Engr. Burke, seconded by Engr. Joachim, that the matter again be taken up at the second meeting from this.

The following were elected members of the Chapter:

Engr. Carroll Blake,
Engr. E. M. Richardson,
Engr. F. A. P. Lopez.

Upon motion of Professor Riedel it was voted that Secretary Dorfman send appropriate letters to the families of Raphael J. Smyth and Harry D. Leopold, deceased.

Upon motion of Engr. Fouhy it was voted that the Secretary send a letter of condolence to past president Joseph A. Vertefeuille in the death of his son, Nicholas.

Engr. Sewall submitted the report of the Membership Committee held June 5, 1939 and the following recommendations were approved:

Item 1—That the names of candidates should be posted on the special bulletin board—That the names should be listed on the meeting notice somewhat as follows: "The following applications for membership have been received and referred to the Membership Comm. Engr. .... Proposed by Engr. ..... Before endorsement by the Committee, one member of the Committee will visit or arrange an appointment with a candidate and receive him at the meeting after he is elected."

Item 5—Method of contacting prospects was discussed. It was voted that guest cards be printed in form to be prepared by the Secretary inviting potential members to our meetings.

Engr. Freeman moved and it was duly seconded and voted that Secretary Dorfman prepare and edit a Bulletin similar to the Bulletin of the Brooklyn Engineers' Club and it was further voted that an appropriation of $100 be set aside for its publication for one year.

GEORGE A. DORFMAN,
Secretary.

OHIO

From "The Cleveland Engineer"

THE CLEVELAND SOCIETY OF PROFESSIONAL ENGINEERS

Held its annual clam bake and outing Thursday, September 21, 1939 at 6048 Broadview Road

—

Golf Party

The Program Committee ably headed by Arthur Stark, gave members and guests a grand party at Ridgewood Country Club on July 27. There were 93 out for golf and 30 additional attended the dinner.

Howard Quigley accompanied by David Strauss entertained with several songs, and "Professor" Holland, with several tricks, convinced the audience that the eye is slower than the hand.

The McWilliams Trophy for low gross score was won by H. Reeves, and Jim Morrison had the lowest putts. J. T. Broz was closest to Number Twelve pin and David Strauss had the high gross score. The Blind Bogey of 82 was tied between W. K. Dawson, C. T. Oakley and Ed. Seveseck. Dawson won the toss. Louis Drasler, Frank Miller, Ed Lesko, H. Tepel and George Schauder tied for the second Blind Bogey.

The remainder of the prizes, totaling 92, were distributed at a grand drawing.

—

New Members

We welcome into our Society and introduce to the membership the following new members:

Frank Paul Camperchioli, 1328 E. 111th St., Cleveland, O.
Thomas R. Connor, 14625 Caldwell Ave., Cleveland, O.
William H. Freiburger, 3285 Hyde Park, Cleveland Hts., O.
Fred W. Gould, 1269 Bender Ave., E. Cleveland, O.
James M. McCleary, 5th and Front St., Berea, O.
Donald L. Murdock, 2016 Cornell Rd., Cleveland, O.
Howard H. Palmer, Solon, O.

Leo J. Regner, 9523 Orleans Ave., Cleveland, O.
L. Springer Speer, P. O. Box, No. 622, Chagrin Falls, O.
LeRoy G. Williams, 2070 W. 53d St., Cleveland, O.

PENNSYLVANIA

PHILADELPHIA CHAPTER

Pennsylvania Society of Professional Engineers

The first meeting of the fall season was held at the *Engineers Club, 1317 Spruce Street,* on *Thursday, October 5th.*

The following officers and committee members will function during the ensuing year:

President .....Frank E. Hahn
Vice-President .....Lawrence Costello
Secretary .....Henry F. Bamberger
Treasurer .....Milton H. Blez

Chapter Directors

John Edgar Hires, ...Term expires 40
Sheldon A. Keast, ...Term expires 40
Samuel Gross, ...Term expires 41
David C. Finston, ...Term expires 41
Robert V. Hudson, ...Term expires 42
Charles A. Bareuther, ...Term expires 42
State Director, Samuel I. Sacks, Esq.

COMMITTEES

Legislative & Public Relations:
Samuel I. Sacks, Esq., Chairman; Major Thos. W. Battin, Vice-Chairman; Thomas Buckley, M. L. Conneen.

Publicity:
A. A. Townsend, Chairman; Samuel Gross, Vice-Chairman; Charles A. Bareuther, Charles A. Flanagan.

Membership:
M. L. Conneen, Chairman; A. A. Townsend, Vice-Chairman; Henry F. Bamberger, Sheldon A. Keast.

Nominating:
David C. Finston, Chairman; John Edgar Hires, Irving S. Towsley, Benjamin H. Utal.

Meeting & Program:
Lawrence Costello, Chairman; Walter E. Witte, Vice-Chairman; Wilbert C. Cornell, David C. Finston.

Ethics & Practice:
Robert V. Hudson, Chairman; John L. Costello, Vice-Chairman; Edward M. Bassett, William H. Gravell.

Auditing:
Walter E. Witte, Chairman; Joseph E. Gill, George H. Kaithern, Harry M. Shandles.

Administrative:
All of the Elected Officers and the Chairmen of all Standing Committees.

The November Meeting *(November 2d)* will be honored by the presence of Professor Elmer Allen Holbrook, Dean of the School of Engineering and Mines of the University of Pittsburgh.

Please note this date on your diary and reserve this time for a very interesting meeting. Dinner will be served as usual at 6 P. M. and we will have with us a number of prominent guests from the various engineering schools in this area.

THE PITTSBURGH ENGINEER

PITTSBURGH CHAPTER

Pennsylvania Society of Professional Engineers

Issued Monthly by Publications Committee

Martin C. Knabe, Chairman
Earl Dwight Covell, Vice-Chairman

VOLUME III SEPTEMBER, 1939 NUMBER 8

Calendar

Pittsburgh Chapter Meeting: Assembly Room, Fort Pitt Hotel, 8:00 p. m., Thursday, Sept. 21, 1939.
Speaker: Engineer Roswell Canfield, Past President, Pittsburgh Chapter, P. S. P. E.
Subject: "Senate Bill 803, An Analogy."
Dinner: Fort Pitt Coffee Shop—6:30 p. m.

Membership

The total membership of the Chapter remains at 186 with no new members for this month.

Items of Interest

The Erie Chapter, P. S. P. E., held its regular meeting, Monday evening, September 11, 1939. Engineer Roswell Canfield, Past President, Pittsburgh Chapter, P.S.P.E., spoke on "Senate Bill 803, An Analogy." Engineer F. G. Ross, President, Pittsburgh Chapter, gave a short talk and extended greetings from our Chapter. County Engineer Supplee and his trained bird furnished the music.

The Johnstown Chapter met at the Cox Farm, September 26.

Editorial

The Membership

With each issue of this publication, a brief paragraph presents the status of the chapter's membership. It is regretable that this issue shows no additions. One indication of a healthy organization is growth. It is true that summer slows the progress, but it should not stifle it.

However, the hot days are gone, and with the coming of autumn, the membership list should increase. Very few of the registered engineers who are not affiliated with the society will apply for membership on their own volition. The advantages and benefits which the society has to offer must be presented by the present membership. Each member is, in effect, the contact between the society and the engineers who may join it.

The advantage of a small, aggressive membership, continually fighting for its objectives, with little or no increase in size until those objectives are secured is outweighed by the human inclination to measure success by increase in size. In other words, a small, successful group will not remain small, because, being successful, others will wish to join it. It is the duty of the present membership to point out to prospective members the achievements of the society, and thus make all engineers conscious of its successes. Engineer Covell has already pointed out the consideration which a major political party commands. Similarly this society must command the respect of the engineering profession. Size is a definite means of obtaining such respect.

Besides increasing the membership through recruiting, it is important that all of the present membership remains in that status. A large number of new names means nothing, if an equal number drop out. Resignations mean dissatisfaction, lack of interest; thereby indicating little or no benefits were to be obtained. The responsibility of the leadership in this regard is very great. Most resignations come from those who take no part in affairs; who very frequently joined on account of friendship, pressure, or misunderstanding, expecting much bigger advantages without realizing that their assistance is needed to obtain these benefits. The duty of the leadership in handling the membership so that each realizes his individual importance, and also his task, cannot be exaggerated. Signing up new members is not enough. Skillful handling of the membership, making the most of the forces available, is also essential.

M. C. KNABE.

MARYLAND

On August 25, 1939 Governor Herbert R. O'Conor named his appointees to the Maryland State Board of Registration for Professional Engineers and Land Surveyors from three nominees recommended by each of the Maryland chapters or sections of The American Society of Civil Engineers, The American Society of Mechanical Engineers, The American Institute of Electrical Engineers and The American Institute of Chemical Engineers, as provided by the law. The Governor's selections for the Board were: Professor A. G. Christie, Head of the Department of Mechanical Engineering, The Johns Hopkins University, Baltimore, consulting engineer, and national President of the A. S. M. E.; Dr. Sheppard T. Powell, consulting chemical engineer, of Baltimore, member of A. I. Chem. E., Maryland Society Professional Engineers and N. S. P. E.; F. O. Schnure, electrical superintendent of the Bethlehem Steel Co. of Sparrows Point, member of A. I. E. E.; John R. Baker, of Baltimore, engineer for the Pennsylvania Water and Power Co., member of A. S. M. E.; and Vinton D. Cockey, of Laurel, civil engineer and land surveyor.

The first meeting of this Board was held on Sept. 18th at which time officers were elected and steps taken to prepare the forms and procedures necessary to administer the law known as Article 75½ of the Annotated Code of Maryland. The Board elected Prof. A. G. Christie as Chairman, Dr. Sheppard T. Powell as Vice-Chairman, and John R. Baker as Secretary. For the time being the mailing address of the Board is Room 1616 Lexington Bldg., Baltimore.

The Board is at present reviewing the experience and procedure of registration machinery available from other states with a view to setting up the best procedure possible for receiving applications for registration and licensing under the law.

A communication I received from the Board dated Sept. 21st 1939 states:

"Announcement will be sent to the local Secretaries of the several engineering societies having Maryland sections and to the engineer clubs in Maryland, technical publications, newspapers, etc., as soon as the Board has established a procedure for receiving applications for registration, together with information for obtaining and completing application forms for registration. It is hoped that all contemplating application for registration will thereby be advised of the plans of the Board as they develop."

In a letter to me announcing his appointments Governor O'Conor said: "From all the information submitted to me and which I have been able to gather, I am convinced that this Board will be an outstanding one. Furthermore, the caliber of the men selected guarantees a proper administration of the duties entrusted to this group."

In THE SUN, a Baltimore newspaper, of August 26th, 1939, the Governor, commenting on the appointments, is quoted as saying:

"The registration of professional engineers is a new venture in Maryland, although it exists in the great majority of other States in the country. Quite a difference of opinion was expressed by interested parties during the period when the law was under consideration by the Legislature as well as before me for approval.

"Although strenuous efforts were made to have me veto the bill, I declined to do so because I have been convinced that, if properly administered, the law will represent a step forward in the professions affected.

"But in order that it may be properly administered, it is necessary that the personnel of the board be of the highest. With this in view, I have taken considerable time to delve into the engineering and general experience of the various nominees.

"I have also consulted with a number of representative leaders of the profession, members of the faculty of the University of Maryland and other persons who are in a position to give valuable advice in this connection."—R. B. ALLEN, *Secty., Maryland Society of Professional Engineers.*

Maryland Licensing Act

CHAPTER No. 752.

AN ACT to add a new article to the Annotated Code of Maryland (1924 Edition), said new Article to be known as Article 75½, to be under "Professional Engineers and Land Surveyors," and to follow immediately after Article 75 of said Code, to regulate the practices of professional engineering and land surveying; creating a State Board of Registration for Professional Engineers and Land Surveyors; defining its powers and duties; imposing certain duties upon the State; and providing penalties.

SECTION 1. *Be it enacted by the General Assembly of Maryland*, That a new Article be and it is hereby added to the Annotated Code of Maryland (1924 Edition), said new Article to be known as 75½, to be under title "Professional Engineers and Land Surveyors," and to follow immediately after Article 75 of said Code and to read as follows:

Professional Engineers and Land Surveyors

1. General Provisions. Only qualified persons to hold themselves out as professional engineers and land surveyors. It is hereby declared that in order to safeguard life, health and property and to promote the public welfare by requiring that only properly qualified persons shall hold themselves out as professional engineers or land surveyors or use the designation of professional engineer or land surveyor in the State of Maryland, such persons shall be compelled to submit evidence that they are qualified to practice professional engineering or land surveying, and shall be registered as hereinafter provided.

2. Definition—Engineer. The term engineer as used in this Article shall mean a professional engineer as hereinafter defined.

Definition—Professional Engineer. The term professional engineer as used in this Article shall mean a person who is qualified by reason of his knowledge of mathematics, the physical sciences, and the principles of engineering, acquired by professional education and practical experience, to engage in the practice of professional engineering as hereinafter defined.

Definition—Engineering. The term engineering as used in this Article shall mean professional engineering as hereinafter defined.

Definition—Professional Engineering. The practice of professional engineering within the meaning and interest of this Article includes any professional service, such as consultation, engineering investigation, evaluation, planning, design, or responsible supervision of construction or operation, in connection with any public or private utilities, structures, buildings, machines, equipment, processes, works, or projects, wherein the public welfare or the safeguarding of life, health or property is concerned or involved, when such professional service requires the application of engineering principles and data.

Definition—Article Inapplicable To Certain Operators, etc. The practice of professional engineering shall not include the work ordinarily performed by persons who operate or maintain machinery, or equipment.

Definition—Land Surveyor. The term land surveyor as used in this Article shall mean a person who engages in the practice of land surveying as hereinafter defined.

Definition—Land Surveying. The practice of land surveying within the meaning and intent of this Article includes surveying of areas for their correct determination and description and for conveyancing, or for the establishment or re-establishment of land boundaries and the plotting of lands and sub-divisions thereof.

Definition—Board. The term "Board" as used in this Article shall mean the State Board of Registration for Professional Engineers and Land Surveyors, provided for by this act.

Definition—Responsible Charge. The term 'responsible charge" as used in this Article shall mean the control and direction of the investigation, design, construction or operation of engineering work requiring initiative, professional skill and independent judgment.

3. Board Appointment—Terms. A State Board of Registration for Professional Engineers and Land Surveyors is hereby created

whose duty it shall be to administer the provisions of this Article. The Board shall consist of five professional engineers all of whom shall be appointed by the Governor from nominees recommended by the Maryland chapter or section of the American Society of Civil Engineers, the American Society of Mechanical Engineers, the American Institute of Electrical Engineers and the American Institute of Chemical Engineers, and who shall have the qualifications required by section 4. The Board shall consist of at least one Civil Engineer, one Mechanical Engineer, one Electrical Engineer, and one Chemical Engineer.

The above societies shall each recommend not more than three nominees for the first board. In filling a vacancy, there being only one engineer of that classification, on the Board of the society of that classification only shall recommend not more than three nominees. If a vacancy occurs in a classification with two engineers on the board, each of the societies above mentioned shall recommend not more than three nominees.

The members of the first Board shall be appointed within ninety days after the passage of this Article, to serve for the following terms: One member for one year, one member for two years, one member for three years, one member for four years, and one member for five years, from the date of their appointment, or until their successors are duly appointed and qualified. Every member of the Board shall receive a certificate of his appointment from the Governor and before beginning his term of office shall file with the Secretary of State his written oath or affirmation for the faithful discharge of his official duty. Each member of the Board first appointed hereunder shall receive a certificate of registration under this Article from the said Board. On the expiration of the term of any member, the Governor shall in the manner hereinbefore provided appoint for a term of five years a registered professional engineer, having the qualifications required by Section 4, to take the place of the member whose term on said Board is about to expire. Each member shall hold office until the expiration of the term for which such member is appointed or until a successor shall have been duly appointed and shall have qualified.

4. Board—Qualifications. Each member of the Board shall be a citizen of the United States and a resident of this State, and shall have been engaged in the practice of the profession of engineering for at least twelve years, and shall have been in responsible charge of important engineering work for at least five years. Responsible charge of engineering work for at least five years.[1] Responsible charge of engineering teaching may be construed as responsible charge of important engineering work.

5. Board—Compensation and Expenses. Members shall not receive compensation for serving on the Board, but shall be reimbursed for all actual traveling, incidental, and clerical expenses necessarily incurred in carrying out the provisions of this Article.

6. Board—Removal of Members—Vacancies. The Governor may remove any member of the Board for misconduct, incompetency, neglect of duty, or for any other sufficient cause. Vacancies in the membership of the Board shall be filled for the unexpired term by appointment by the Governor as provided in Section 3.

7. Board—Organization and Meetings. The Board shall hold a meeting within thirty days after its members are first appointed, and thereafter shall hold at least two regular meetings each year. Special meetings shall be held at such time as the by-laws of the Board may provide. Notice of all meetings shall be given in such manner as the by-laws may provide. The Board shall elect annually from its membership the following officers; A Chairman, a Vice-Chairman, and a Secretary. A quorum of the Board shall consist of not less than three members.

8. Board—Powers. The Board shall have the power to adopt and amend all by-laws and rules of procedure, not inconsistent with the constitution and laws of this State, which may be reasonably necessary for the proper performance of its duties and the regulations of the proceedings before it. The Board shall adopt and have an official seal.

9. Receipts and Disbursements. The Secretary of the Board shall receive and account for all moneys derived under the provisions of this Article, and shall pay the same monthly to the State Treasurer, who shall keep such moneys in a separate fund to be known as the "Professional Engineers' Fund." Such fund shall be kept separate and apart from all other moneys in the Treasury, and shall be paid out only by warrant of the State Comptroller upon the State Treasurer upon itemized vouchers; approved by the Chairman and attested by the Secretary of the Board. All moneys in the "Professional Engineers' Fund" are hereby specifically appropriated for the use of the Board. The Secretary of the Board shall give a surety bond to the State in such sum as the Board may determine. The premium on said bond shall be regarded as a proper and necessary expense of the Board, and shall be paid out of the "Professional Engineers' Fund." The Board may employ such clerical, technical, or other assistants as are necessary for the proper performance of its work, and may make expenditures of this fund for any purpose which in the opinion of the Board is reasonably necessary for the proper performance of its duties under this Article, including the expenses of the Board's delegates to annual conventions of, and membership dues to, the National Council of State Boards of Engineering Examiners. Under no circumstances shall the total amount of warrants issued by the State Comptroller in payment of the expenses and compensation provided for in this Act exceed the amount of the examination and registration fees collected as herein provided.

10. Records and Reports. The Board shall keep a record of its proceedings and a register of all applications for registration, which register shall show (a) the name, age, and residence of each applicant; (b) the date of the application; (c) the place of business of such applicant; (d) his educational and other qualifications; (e) whether or not an examination was required; (f) whether the applicant was rejected; (g) whether a certificate of registration was granted; (h) the date of the action of the Board; and (i) such other information as may be deemed necessary by the Board.

The records of the Board shall be prima facie evidence of the proceedings of the Board set forth therein, and a transcript thereof, duly certified by the Secretary of the Board under seal, shall be admissible in evidence with the same force and effect as if the original were produced.

Annually, as of September 30th, the Board shall submit to the Governor a report of its transactions of the preceding year, and shall also transmit to him a complete statement of the receipts and expenditures of the Board, attested by affidavits of its Chairman and its Secretary.

11. Roster. A roster showing the names and places of business of all registered professional engineers and all registered land surveyors shall be kept by the Secretary of the Board. Copies of this roster shall be placed on file with the Secretary of State, and furnished to the public upon request.

12. General Requirements for Registration. The following shall be considered as minimum evidence satisfactory to the Board that the applicant is qualified for registration as a professional engineer, or land surveyor, respectively, to wit:

(1) As a professional engineer:

a. Engineers—Graduation Plus Experience. Graduation from a school or college whose engineering curriculum is approved by the Board as of satisfactory standing; and a specific record of an additional four years or more of experience in engineering work of a character satisfactory to the Board, and indicating that the applicant is competent to practice professional engineering (in counting years of experience, the Board at its discretion may give credit, not in excess of one year, for satisfactory study in engineering), provided that in a case where the evidence presented in the application does not appear to the Board conclusive nor warranting the issuing of a certificate of registration, the applicant may be required to present further evidence for the consideration of the Board, and may also be required to pass an oral or written examination or both, as the Board may determine; or

b. Engineers—Examination Plus Experience. Successfully passing a written or oral or written and oral examination designed to show knowledge and skill approximating that attained through graduation from an approved four-year engineering curriculum; and a specific record of eight years or more of experience in engineering work of a character satisfactory to the Board and indicating that the applicant is competent to practice professional engineering; or

c. Engineers of Long Established Practice. A specific record of twelve years or more of lawful practice in professional engineering work of a character satisfactory to the Board and indicating that the applicant is qualified to design or to supervise construction of engineering work and provided applicant is not less than thirty-five years of age.

(2) As a land surveyor:

a. Land Surveyors—Graduation Plus Experience. Graduation from a school or college approved by the Board as of satisfactory standing, including the completion of an approved course in surveying; and an additional two years or more of experience in land surveying work of a character satisfactory to the Board and indicating that the applicant is competent to practice land surveying; or

b. Land Surveyors—Examination Plus Experience. Successfully passing a written or oral, or written and oral examination in surveying prescribed by the Board; and a specific record of six years or more of experience in land surveying work of a character satisfactory to the Board and indicating that the applicant is competent to practice land surveying; or

c. Land Surveyors of Long Established Practice. A specific record of ten years or more of lawful practice in land surveying work of a character satisfactory to the Board and provided applicant is not less than thirty years of age.

Character. No person shall be eligible for registration as a professional engineer, or land surveyor, who is not of good character and reputation.

Teaching Credits. In considering the qualifications of applicants, engineering teaching may be construed as engineering experience.

(1) This repetition is in the Act.

Education Credits. The satisfactory completion of each year of an approved curriculum in engineering in a school or college approved by the Board as of satisfactory standing, without graduation, shall be considered as equivalent to a year of experience in Section 12 (1) b. Graduation in a curriculum other than engineering from a college or university of recognized standing may be considered as equivalent to two years of experience in Section 12 (1) b; provided, however, that no applicant shall receive credit for more than four years of experience because of under-graduate educational qualifications.

Work as Contractor. The mere execution, as a Contractor, of work designed by a professional engineer, or the supervision of the construction of such work as a foreman or superintendent shall not be deemed to be practice in professional engineering.

Non-Practicing Applicants. Any person having the necessary qualifications prescribed in this Article to entitle him to registration shall be eligible for such registration although he may not be practicing his profession at the time of making his application.

13. Applications and Registration Fees. Applications for registration shall be on forms prescribed and furnished by the Board, shall contain statements made under oath, showing the applicant's education and detail summary of his technical work, and shall contain not less than five references of whom three or more shall be engineers having personal knowledge of his engineering experience.

The registration fee for professional engineers shall be twenty-five dollars ($25.00), fifteen dollars ($15.00) of which shall accompany the application, the remaining ten dollars ($10.00) to be paid upon issuance of certificate. When a certificate of qualification issued by the National Bureau of Engineering Registration is accepted as evidence of qualification, the total fee for registration as Professional Engineer shall be ten dollars and 00/100 cents ($10.00).

The registration fee for land surveyors shall be fifteen dollars ($15.00), which shall accompany the application.

When a person desires registration both as Professional Engineer and Land Surveyor, the fee shall be twenty-five dollars ($25.00) which shall accompany application.

Should the Board deny the issuance of a certificate of registration to any applicant the initial fee deposited shall be retained as an application fee.

14. Examinations. When oral or written examinations are required, they shall be held at such time and place as the Board shall determine. If examinations are required on fundamental engineering subjects (such as are ordinarily given in college curricula) the applicant shall be permitted to take this part of the professional examination prior to his completion of the requisite years of experience in engineering work, and satisfactory passage of this portion of the professional examination by the applicant shall constitute a credit for a period of ten years.

The scope of the examinations and the methods of procedure shall be prescribed by the Board with special reference to the applicant's ability to design and supervise engineering works so as to insure the safety of life, health and property. Examinations shall be given for the purpose of determining the qualifications of applicants for registration separately in Professional Engineering and Land Surveying. A candidate failing on examination may apply for re-examination at the expiration of six months and will be re-examined without payment of additional fee. Subsequent examination will be granted upon payment of a fee to be determined by the Board, which fee shall not exceed ten dollars ($10.00).

15. Certificates—Seals. The Board shall issue a certificate of registration upon payment of registration fee as provided for in this Article, to any applicant who, in the opinion of the Board, has satisfactorily met all the requirements of this Article. In case of a registered engineer, the certificate shall authorize the practice of "professional engineering," and in the case of a registered land surveyor, the certificate shall authorize the practice of "land surveying." In the case of a person who is both a registered engineer and a registered land surveyor, only one certificate shall be issued, which shall authorize the practice of "Professional Engineering and Land Surveying." Certificates of registration shall show the full name of the registrant, shall have a serial number, and shall be signed by the Chairman and the Secretary of the Board under seal of the Board.

The issuance of a certificate of registration by this Board shall be prima facie evidence that the person named therein is entitled to all the rights and privileges of a registered professional engineer, or of a registered land surveyor, or both, while the said certificate remains unrevoked.

Each registrant hereunder shall upon registration obtain a seal of the design authorized by the Board bearing the registrant's name and the legend, "Registered Professional Engineer," 'Registered Land Surveyor," or "Registered Professional Engineer and Land Surveyor." Plans, specifications, plats, and reports approved by a registrant shall be stamped with the said seal when filed with public authorities, during the life of the registrant's certificate, but it shall be unlawful for anyone to stamp or seal any documents with said seal after the certificate of the registrant named thereon has been revoked, unless said certificate shall have been reissued.

16. Practitioners at Time Article Became Effective. At any time within one year after this Article becomes effective, upon due application therefor and the payment of a registration fee of fifteen dollars ($15.00) for professional engineers or professional engineers and land surveyors, or ten dollars ($10.00) for land surveyors—the Board shall issue a certificate of registration, without oral or written examination, to any professional engineer or land surveyor who shall submit evidence under oath satisfactory to the Board that he is of good character, has been a resident of the State of Maryland for at least one year immediately preceding the date of his application, and was practicing professional engineering if an engineer, or land surveying if a surveyor, at the time this Article became effective, and has performed work of a character satisfactory to the Board.

After this Article shall have been in effect one year, the Board shall issue certificates of registration only as provided for in Section 12 or Section 18 thereof.

17. Public and Private Work. Nothing in this Act shall be construed to require any person, firm, or corporation, or the state, or any of its political subdivisions, to employ the services of a licensed professional engineer, or a licensed land surveyor, in any project of any kind whatsoever, or in any position involving professional engineering or land surveying, or both.

18. Reciprocity. The Board may enter into agreements for reciprocity with the licensing agencies of other jurisdictions and issue without fee or examination, if such reciprocal arrangements can be made, a certificate of Registration as a Professional Engineer or Land Surveyor to any person legally qualified to practice in other jurisdictions whose license requirements are acceptable to the Board, giving full faith and credence to the acts of the authority by which they were qualified. When agreements for reciprocity without fee cannot be made, the fee for a reciprocal license shall be twenty-five dollars ($25.00) for professional engineer, or fifteen dollars ($15.00) for land surveyor.

19. Revocations. The Board shall have the power to revoke the certificate of registration of any registrant who is found guilty of:

(a) The practice of any fraud or deceit in obtaining a certificate of registration;

(b) Any gross negligence, incompetency, or misconduct in the practice of professional engineering or land surveying as a registered professional engineer or land surveyor.

Any person may prefer charges of fraud, deceit, gross negligence, incompetency, or misconduct against any registrant. Such charges shall be in writing, and shall be sworn to by the one making them and shall be filed with the secretary of the Board.

All charges, unless dismissed by the Board as unfounded or trivial, shall be heard by the Board within three months after the date on which they shall have been preferred.

The time and place for said hearing shall be fixed by the Board, and a copy of the charges, together with a notice of the time and place of hearing, shall be personally served on or mailed to the last known address of such registrant, at least thirty days before the date fixed for the hearing. At any hearing, the accused registrant shall have the right to appear personally and by counsel, to cross-examine witnesses appearing against him, and to produce evidence and witnesses in his own defense.

If, after such hearing, three or more members of the Board vote in favor of finding the accused guilty, the Board shall revoke the certificate of registration of such registered professional engineer or land surveyor.

Reissuance of Certificates. The Board, for reasons it may deem sufficient, may re-issue a certificate of registration to any person whose certificate has been revoked, providing three or more members of the Board vote in favor of such reissuance. A new certificate of registration, to replace any certificate revoked, lost, destroyed, or mutilated, may be issued, subject to the rules of the Board, and a charge of three dollars ($3.00) shall be made for such issuance.

Appeals. Any person who shall feel aggrieved by any action of the Board in denying or revoking his certificate of registration may appeal therefrom to the Supreme Bench of Baltimore City or to the Circuit Court for any county and, after full hearing, said Court shall make such decree sustaining or reversing the action of the Board as to it may seem just and proper.

20. Violations and Penalties. Any person who shall hold themselves out as a professional engineer or land surveyor in this State without being registered in accordance with the provisions of this Article, or any person presenting or attempting to use as his own the certificate of registration or the seal of another, or any person who shall give any false or forged evidence of any kind to the Board or to any member thereof in obtaining a certificate of registration, or any person who shall falsely impersonate any other registrant of like or different name, or any person who shall attempt to use a revoked certificate of registration, or any person who shall violate any of the provisions of this Article, shall be guilty of a misdemeanor, and shall, upon conviction, be sentenced

to pay a fine of not less than one hundred dollars ($100.00), nor more than five hundred dollars ($500.00), or suffer imprisonment for a period not exceeding three months, or both.

The Attorney General of the State or his assistant shall act as legal advisor of the Board and render such legal assistance as may be necessary in carrying out the provisions of this Article.

21. Saving Clause. This Article shall not be construed to prevent or to affect:

(a) Other Professions or Trades. The practice of any other legally recognized profession or trade; or

(b) Non-Residents. The practice of a person not a resident of and having no established place of business in this State, practicing or offering to practice herein the profession of engineering or land surveying, when such practice does not exceed in the aggregate more than thirty days in any calendar year; provided, such person is legally qualified by registration to practice the said profession in his own State or County in which the requirements and qualifications for obtaining a certificate of registration are not lower than those specified in this Article; or

(c) Recent Arrivals in State. The practice of a person not a resident of and having no established place of business in this State, or who has recently become a resident thereof, practicing or offering to practice herein for more than thirty days in any calendar year the profession of engineering or land surveying, if he shall have filed with the Board an application for a certificate of registration and shall have paid the fee required by this Article; provided, that such a person is legally qualified by registration to practice said profession in his own State or County in which the requirements and qualifications for obtaining a certificate of registration are not lower than those specified in this Article. Such practice shall continue only for such time as the Board requires for the consideration of the application for registration; or

(d) Employees and Subordinates. The work of an employee or a subordinate of a person holding a certificate of registration under this Article, or an employee of a person practicing lawfully under paragraphs (b) or (c) of this Section; provided, such work is done under the direct responsibility and supervision of a person holding a certificate of registration under this Article or a person practicing lawfully under Paragraphs (b) or (c) of this Section; or

(e) Government Officers and Employees. The practice of officers and employees of the Government of the United States while engaged within this State in the practice of the profession of engineering or land surveying, for said Government.

(f) Employees of Public Utility Companies. The work or practice of a regular employee of a public utility company, by rendering to such company engineering service in connection with its facilities which are subject to regulation, supervision, and control, in order to safeguard life, health and property by a state or federal regulatory commission having jurisdiction so long as such person is thus actually and exclusively employed and no longer.

(g) Officers and Employees of Corporations engaged in Interstate Commerce. The work or practice of professional engineering or land surveying, solely as an officer or an employee of a corporation engaged in interstate commerce.

22. Invalid Sections. If any section or sections of this Article shall be declared unconstitutional or invalid this shall not invalidate any other sections of this Article.

SEC. 2. *And be it further enacted,* That all laws or parts of laws inconsistent with the provisions of this Article shall be and the same are hereby repealed to the extent of such inconsistency.

SEC. 3. *And be it further enacted,* That this Act shall take effect June 1, 1939.

Obituary

Raphael J. Smyth, chief of the engineering bureau of Bronx County, N. Y., died last week in New York City. Smyth was a graduate of Cooper Union and had done post graduate work in engineering at Columbia University, New York University and Brooklyn Polytechnic. He joined the Bronx engineering department in 1907, later becoming engineer of design and deputy chief engineer, and in 1938 was appointed chief engineer. In earlier life he had worked for a time with the New York Rapid Transit Commission. Recently he had been in charge of constructing the new Triborough Bridge approach through the Bronx.

The Bronx County Chapter of the New York State Society of Professional Engineers held its October meeting at the Concourse Plaza Hotel.

The Chapter noted with regret the recent deaths of three of its members, Engineer Raphael J. Smyth, chief engineer of the Bronx, former Chapter secretary, Harry McKean Conner, and Engineer William Quirk.

The meeting was featured by the attendance of a large group of engineering students from the technical schools of the Bronx, New York University, Manhattan College and the Webb Institute of Naval Architecture, together with representatives of the several faculties. An address on "The Development of the Professional Attitude" was delivered by City Planning Commissioner, Arthur B. Sheridan.

Professor Alexander Haring discussed plans for a course in public speaking to be given by him free of charge for members of the Chapter. Engineer Patrick Murray reported on the activities of the Public Works Committee in developing ideas for engineering projects of benefit to the Borough.

A report on a plan for making engineering services of members of the Chapter readily available to the legal profession was given by Engineer Joseph B. Diamond. Plans were made to reserve a table for Chapter members at the Chamber of Commerce silver jubilee dinner at the Concourse Plaza Hotel on October 11th.

The following resolution was adopted:

WHEREAS, Engineer Raphael J. Smyth was one of the founders of Bronx County Chapter and a loyal member of the chapter for many years, and

WHEREAS, he served Bronx County Chapter with distinction as Chapter President and as a member of the Board of Directors, and

WHEREAS, he was one of the organizers of the New York State Society of Professional Engineers which he served faithfully and well as a member of the Board of Directors and as Historian, and

WHEREAS, he distinguished himself in his long years of service to the Borough of the Bronx and eventually was chosen as Chief Engineer of the Borough, and

WHEREAS, he was held in high esteem by the members of Bronx County Chapter for his preeminent professional standing as an engineer and as an architect, and for his nobility of characcer and lovable personality, and

WHEREAS, our members are sensible of a profound personal loss since he went to his reward, and

WHEREAS, our members are appreciative of the great loss experienced by Engineer Smyth's beloved wife through his departing this life,

THEREFORE, BE IT RESOLVED that the members of Bronx County Chapter of the New York State Society of Professional Engineers extend to Agnes R. Smyth their heartfelt sympathy in her bereavement and their earnest wish that God will give her the strength and courage to bear up under her loss.

JOSEPH B. DIAMOND.

NEW YORK STATE EXAMINATIONS

A total of 230 candidates took the Professional Engineers' Examinations in June, 1939. Of this total, 127 candidates (or 55%) passed, 71 candidates (or 31%) were conditioned in one subject, and 32 candidates (or 14%) failed in two or more subjects and have to repeat the complete examinations. The results in the three separate parts of the examination were as follows:

P. E. Exam	*Total*	*Passed*	*Failed*	*% Passed*
Part I	163	138	25	85%
Part II	132	75	57	57
Part III	148	92	56	62

These results show a welcome improvement over the results of the two preceding semi-annual examinations. This improvement may be partly credited to the fact that the new examination papers included questions contributed by the State Society of Professional Engineers, the American Society of Civil Engineers, and other engineering organizations.

TEXAS SOCIETY NEWS

Engineer Fred E. Rightor has resigned the office of President of the Texas Society of Professional Engineers. Engineer Rightor has served the state society most ably during the ten months of his regime and the directors regretfully accepted his resignation in order that he may devote his efforts to serving the Engineers of Texas in his official capacity as Secretary of the State Board of Registration for Professional Engineers.

Engineer Walter E. Seaholm of Austin was elected president to complete the balance of Engineer Rightor's term. Engineer Seaholm is president of the Travis Chapter of the Texas Society and Electrical Superintendent of the City of Austin.

Engineer John D. Miller of Austin was elected first vice-president in Engineer Seaholm's former office and Engineer H. R. F. Helland of San Antonio was elected to the office of second vice-president vacated by Engineer Miller.

In adition to the changes in official personnel mentioned above, the directors of the Texas Society elected Engineer W. E. Simpson, past president of the State Society, to the office of National Director. This office was not filled at the time of the regular election of officers.

Engineer A. C. Loyd of San Antonio was elected as a state director to fill the vacancy caused by the resignation of Engineer P. K. Lucke. Engineer Lucke resigned on account of ill-health.

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The Travis Chapter of the Texas Society of Professional Engineers opened its fall membership drive on October 18th. Sixty members and visitors attended the meeting at which the drive was started.

After a smoker and business session, Engineer W. E. Barker, Regional Highway Engineer for the Portland Cement Association, presented a sound motion picture "Keeping Up With Traffic".

On November 2nd., Engineer H. R. F. Helland, of San Antonio, and newly elected vice-president of the Texas Society, addressed the Travis Chapter and the membership candidates gathered in the recent membership drive on the aims and objectives of the Professional Engineers.

The Third Annual Recognition Dinner of the Travis Chapter will be held on Friday, November 24th. The guest of honor will be Engineer T. U. Taylor, Dean Emeritus of the Engineering School of the University of Texas and holder of certificate Number One issued by the Texas Board of Registration for Professional Engineers.

Dean Taylor, whose book "Fifty Years on the Forty Acres" is an account of his experiences as a teacher at Texas University, will be introduced by Engineer R. J. Cummins of Houston.

It is expected that there will be more than two hundred engineers present to honor Dean Taylor for his half-century of service in educating Texas engineers.—D. V. PURINGTON.

Food for Thought

(Continued from page 10)

ministry, dreams of giving so *narrow* a preparation for life. Are we justified in giving it to engineers?"

* * *

In an address before American Engineering Council, at its recent annual assembly, Dr. George F. Zook, President of the American Council on Education, said: "Engineers must realize that they live as members of society, not simply as professional technicians. *They need more cultural studies.* Medicine and law recognize this by requiring two years of pre-professional collegiate training."

* * *

According to *Collier's,* an analysis of several "Who's Who" directories shows that the word "engineer" is employed in more than *2500 different titles,* including such classifications as "bank management engineer," "college engineer," and "export engineer."

* * *

In November and December 1937, the Association of Professional Engineers of the Province of Manitoba presented a series of broadcasts over Radio Station C K Y, Winnipeg, on the general subject of "The Engineer and the Public." The individual subjects presented included: History of Engineering, The Training of an Engineer, Contribution of the Engineer to Industry, Engineering Contribution to Construction, Contributions of the Engineer to the Welfare and Comfort of Daily Life, and The Future Relationship of Engineering to the Body Politic.

Bulletin from Ireland

(Continued from page 6)

All matters published in the Press which refer to engineers, or to the engineering profession; or which are likely to prove of interest to engineers, are collected, classified and filed. Over 600 items have been collected annually and from these a report is prepared for publication in the Press. The files are always at the disposal of any bona fide enquirer.

The progress of any organisation to-day is enhanced by favourable publicity, and in this respect the Cumann is indebted to the general and technical press,

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STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933

Of The American Engineer published monthly from October to May inclusive, and bi-monthly from June to August inclusive at Harrisburg, Pennsylvania for October 1, 1939.

State of District of Columbia } ss.
County of City of Washington }

Before me, a Willard S. Conlon in and for the State and county aforesaid, personally appeared, who, having been duly sworn according to law, deposes and says that he is the Business manager of the American Engineer and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, and business managers are:

Publisher National Society of Professional Engineers, Washington, D. C.

Editor Robert Hall Craig, 222 N. 3d St., Harrisburg, Penna.

Business Manager Willard S. Conlon, National Press Building, Washington, D. C.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

National Society of Professional Engineers, National Press Building, Washington, D. C.

No stockholders.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.)

None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustee, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is 5000. (This information is required from daily publications only.)

WILLARD S. CONLON.

Sworn to and subscribed before me this 3d day of October, 1939.

MARY P. STONE.

[Seal]

(My commission expires Oct. 1, 1942.)

for the space provided, and the support given to its activities—naturally, however, such publicity of the Cumann's activities would not be given unless these were of general interest.

Contact is maintained with similar Associations in other countries, notably, America, England, and France, and extracts of the Cumann literature and reports of the activities are published in the official journals of these Associations.

With regard to securing a better status and improving the salary conditions of engineers, the Cumann has had particular regard to Resident Engineers and Clerk of Works appointments. Any such appointment advertised on less favourable terms than those provided for in the relevant Cumann Schedule is made the subject of correspondence between the Cumann and the employer concerned. Considerable success has been achieved in this, and other directions. It is interesting to record that in consequence of the Council's action in certain cases when the term Engineer was inappropriately applied, intimation has been received which gives hope that such misappropriation will be avoided in future.

The promotion of Registration has always been the declared policy of the Cumann as being the most effective means of advancing the status of engineers. In recent years the Council's energies have been directed to accumulating valuable data from other countries in preparation for the strong publicity drive which they feel must now be made amongst engineers and the public as a first step towards Registration. Previous leaflets issued by the Cumann may be taken as an initial step in this direction. A meeting was arranged by the Cumann with representatives of the Institution of Civil Engineers of Ireland last month for an interchange of views.

A new and comprehensive Constitution and Rules has just been approved, and it is proposed to register the Cumann as a limited liability Company in the near future.

The first Regional Committee of the Cumann was inaugurated at Athlone in April this year, and preparations are now being made to set up further centres before the end of the year.

Social activities have been fostered in order to bring engineers into closer contact with each other. Also a very successful series of debates were organized at which general rather than technical subjects were discussed.

In furtherance of its efforts to consolidate the entire engineering profession in Ireland, and to encourage it to take an active interest in national and public affairs, the Cumann has prepared and issued circulars and leaflets to the profession regularly every three months for some years past—the total issue being over 12,000.

Mr. Lemass, the Minister for Industry and Commerce, at the last annual dinner made the following remarks:—

> "It is on organisations like Cumann Na nInnealtoiri that we must depend to awaken amongst our people, and particularly in the younger people in technical occupations, enthusiasm for national effort and a realisation of this need of thinking and acting for ourselves.
>
> "If your Cumann is doing that work, and I feel sure that it is, I wish it every success and I promise it every possible support I can give it.

Should any member of the profession desire detailed information on any of the Cumann's activities, the Council invites him to get into communication with the Secretary, and every effort will be made to answer his queries, and every consideration will be given to any suggestions.

On behalf of the Council,
J. G. CHARLETON,
Secretary.

W.P.A. and the Engineer

(Continued from page 5)

Report, together with the purchase order, are reviewed by the United States Treasury Accounts Office for assurance that bidding was open to all vendors and that the lowest bid which met the specifications was accepted. Then, the vendor's voucher is certified to the U. S. Treasury Disbursing office for payment. Finally, these documents, after payment, are forwarded to the General Accounting office in Washington for final audit.

The spending of public funds has been subject to attack by predatory interests, with attendant scandals, but the New York Administration has expended and accounted for over $200,000,000 of Federal funds since 1935 without scandal. As is the case whenever human frailty is involved, there have been scattered instance of pilferage of Federal Property, fraudulent endorsement of workers' checks and some payroll padding; all of which have been turned over to the Federal Bureau of Investigation. In many cases restitution has been made to the Government, or the guilty sent to prison.

In conclusion, may I draw your attention to the fact that there are two distinct Federal Works programs with different objectives. There is the Works Progress Administration and the Public Works Administration. The latter is a construction program which tremendously relieves the unemployment of skilled trades, and keeps the wheels of industry turning by its widespread purchase of materials. But the PWA program does not, to any extent, reach the relief cases because no private contractor wishes to gamble with this type of employee, because they are without any doubt, the poorer craftsmen. The contractor's margin of profit generally will not permit him to take any risk in the selection of his workers.

The third factor entering into any consideration of the accomplishments of the WPA after considering the engineering and the materials is the labor. I find we have accomplished excellent results with the type of labor furnished from the relief rolls. The Works Progress Administration has built from the plans and specifications of the sponsoring communities, projects of major importance: Ley Creek Sewer and Treatment Plant, Syracuse; Loudonville Reservoir, Albany; Buffalo Civic Stadium; the Rome Reservoir; Rochester Tunnels; etc. These projects have been built with relief labor with all the handicaps that accompany the use of this labor.

State Administrator, Lester W. Herzog, has been a Public Works official for many years. He was formerly President of the American Public Works Congress. He knows the value of well performed work and demands of his assistants that they exercise good engineering principles in all project work. As a result, we are able to undertake work and follow it through to completion within reasonable cost and within reasonable time.

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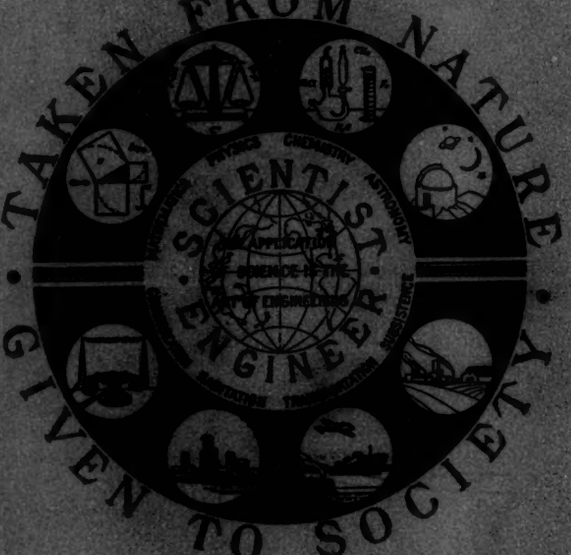

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